



School of Management Studies

EVALUATING THE FIRST YEAR ROLL-OUT OF THE IMIBALA GIFTED AND  
TALENTED ENRICHMENT PROGRAMME OF THE IMIBALA TRUST IN THE  
WESTERN CAPE

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A dissertation submitted in partial fulfilment of the requirement for the award of the  
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**COMPULSORY DECLARATION:**

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works of other people has been attributed, cited and referenced.

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## **EXECUTIVE SUMMARY**

The following dissertation details an evaluation conducted on a giftedness programme. The introduction of giftedness programmes can be traced as far back as 1922 where Terman was one of the first people to document and formalise the link between one's innate ability and their performance on a number of outcomes. Since then many other theorists Renzulli (1977) and Subotnik, Olszewski-Kubilius, and Worrell (2011) have expanded on the definition of giftedness to include not only one's innate ability but development of potential through a specialised environment that encourages the gifted learner to enhance their ability.

In 2013, a programme evaluation student at the University of Cape Town, Reitumetse Mogorosi, conducted research for the Imibala Trust to assist with the design of the Gifted and Talented Enrichment (GATE) Programme. The Imibala Trust had for some time (with the support of the Metropole East Education Department) decided to pilot such a programme that aimed to serve gifted disadvantaged children in the Helderberg region. As a result of Mogorosi's work the GATE personnel were provided with an evaluation report that detailed a plausible programme theory for their programme; the activities that the GATE programme should include in its design; the selection process to be followed to recruit the identified target audience; and the importance of engaging relevant stakeholders in the programme. Following Mogorosi's (2014) report, the GATE programme was piloted in 2014.

In 2014, a second masters' student from the University of Cape Town evaluated the pilot implementation of the GATE programme. This dissertation is an account of that evaluation study. The evaluator conducted two forms of evaluation, namely a process evaluation and a short-term outcome evaluation. The process evaluation aimed to establish whether the GATE personnel had implemented the programme as planned; while the short-term outcome evaluation aimed to determine whether the participants in the GATE programme perceived any changes as a result of the programme.

For the process evaluation, the evaluator compared GATE programme documentation as well as transcribed interview data to the design as recommended by Mogorosi in 2014. It should be noted that this design was recommended based on its foundation in social science research. Evaluators must assess a programme's implementation against its plan, and Mogorosi's (2014) dissertation was viewed as the planned programme for the pilot year. For the short-term outcome evaluation the evaluator collected the participants' academic school results, administered a self-esteem and self-efficacy questionnaire, and interviewed participants to detail their progress throughout the year.

The results of the process evaluation showed that: a) the GATE personnel did not implement the selection process as recommended by Mogorosi in 2014; b) that the GATE personnel did not implement all of the intended activities and amended the programme to include new activities; and c) that the programme had full attendance with no attrition. The implications of these findings and recommendations for the GATE stakeholders were subsequently discussed.

Due to the lack of a control group, the continuous assessment designed school curriculum, as well as the number of participants, the evaluator was not able to conduct a systematic outcome evaluation. As such, the evaluator was only able to provide a case study synopsis of each participant's school performance and a brief summary of the participants' own perspectives of the GATE programme. The results of the short-term outcome evaluation established that seven out of the nine participants' marks in English improved, as well as eight of the nine participants' marks in Mathematics, and their overall average school performance improved by term three. The participants' self-esteem scores were all high at the beginning of the programme and remained consistent throughout the programme. The increase in the academic performance of the gifted learners was an encouraging finding, however, caution must be taken when interpreting these results as the increase cannot directly be linked to the GATE programme. As a result, the evaluator makes recommendations on how GATE personnel should collect data to establish this causal link between the programme activities and the intended outcomes.

## CONTENTS

<b>Chapter one: Introduction</b>	<b>9</b>
Giftedness	9
Do These Programmes Work?	12
Correct Identification of Gifted Learners	12
Most Effective Classroom Approaches	14
Most Effective Design Approaches for Giftedness Programmes	15
What Evaluations Have Been Used and What Are Their Limitations?	15
Best Practice Programmes	17
The Imibala Trust	22
The Conceptualised Programme	22
The First Evaluation Research on the Proposed GATE Programme	23
2014 Evaluation of the GATE Programme	30
<b>Chapter two: Method</b>	<b>32</b>
Method for Process Evaluation	32
Procedure for programme organisation/plan evaluation questions	32
Procedure for service utilisation evaluation questions	33
Procedure for service delivery evaluation questions	33
Method for Short-term Outcome Evaluation	33
Research Design	33
Participants	33
Measures, Procedure and Data Analysis for Short-term Outcome Evaluation	34
Measuring Instruments	35
Self-esteem	35
Self-efficacy	35
Ethical considerations	36

<b>Chapter three: Results and discussion</b>	<b>37</b>
Results for the Process Evaluation	37
Programme organisation/plan	37
GATE Programme selection process	37
GATE Programme Activities	43
Would These Activities Lead to the Intended Outcomes?	48
Service Utilisation	50
Service Delivery	52
Results for the Outcome Evaluation	55
Participant 1	56
Participant 2	58
Participant 3	59
Participant 4	61
Participant 5	64
Participant 6	66
Participant 7	68
Participant 8	69
Participant 9	71
Outcome Evaluation and Recommendations	74
Limitations	79
Final Recommendations and Conclusion	79
<b>References</b>	<b>81</b>
Appendix A: Gate programme staff interview schedule	85
Appendix B: Semi-structured interview schedule for GATE participants	87
Appendix C: Self-esteem and self-efficacy questionnaire	88
Appendix D: Parent consent form	91
Appendix E: Gate cognitive assessment tool	92
Appendix F: Iziko museum worksheet	96
Appendix G: Gate museum programme assessment tool	101

## LIST OF FIGURES

Figure Title	Page
Figure 1. Programme theory for the Imibala GATE Enrichment Programme (Mogorosi, 2014)	29
Figure 2. Proposed and Actual Programme Activities for the Imibala GATE Enrichment Programme	47



## LIST OF TABLES

Table Title	Page
Table 1: Demographic information of the learners in the GATE programme	34
Table 2: GATE programme activities for 2014	46
Table 3: Facilitators who delivered the GATE programme sessions	53
Table 4: Participant One's marks in Grade 5	56
Table 5: Participant One's score for the Dubois et al. (1996) School Self-Esteem Measure and the self-efficacy score	57
Table 6: Participant Two's marks in Grade 5	58
Table 7: Participant Two's score for the Dubois et al. (1996) School Self-Esteem Measure and the self-efficacy score	59
Table 8: Participant Three's marks in Grade 5	60
Table 9: Participant Three's score for the Dubois et al. (1996) School Self-Esteem Measure and the self-efficacy score	60
Table 10: Participant Four's marks in Grade 5	62
Table 11: Participant Four's score for the Dubois et al. (1996) School Self-Esteem Measure and the self-efficacy score	62
Table 12: Participant Five's marks in Grade 5	64
Table 13: Participant Five's score for the Dubois et al. (1996) School Self-Esteem Measure and the self-efficacy score	65
Table 14: Participant Six's marks in Grade 5	66
Table 15: Participant Six's score for the Dubois et al. (1996) School Self-Esteem Measure and the self-efficacy score	67
Table 16: Participant Seven's marks in Grade 5	68
Table 17: Participant Seven's score for the Dubois et al. (1996) School Self-Esteem Measure and the self-efficacy score	69
Table 18: Participant Eight's marks in Grade 5	70
Table 19: Participant Eight's score for the Dubois et al. (1996) School Self-Esteem Measure and the self-efficacy score	71
Table 20: Participant Nine's marks in Grade 5	72
Table 21: Participant Nine's score for the Dubois et al. (1996) School Self-Esteem Measure and the self-efficacy score	72

## **Chapter one Introduction**

The following chapter introduces the subject area for this evaluation. Giftedness as a concept is defined, followed by the characteristics of gifted learners, the need for giftedness programmes, and the various approaches to giftedness education. A review of evaluation literature is also provided which documents the effectiveness of giftedness education as well as implementation recommendations for these kinds of intervention. The evaluation is then introduced with a summary of a design focused evaluation that was conducted in 2013 for the giftedness programme. Following on from the previous evaluation, this chapter concludes with the scope for this evaluation research.

The key role of programme evaluation is to investigate the effectiveness of social intervention programmes (Rossi, Lipsey, & Freeman, 2004). This is important so that evaluators can a) determine the merit and worth of the programme in alleviating the problem; and b) ascertain what changes are necessary to improve the programme's design, delivery and impact. The following half dissertation details an evaluation conducted on a giftedness programme.

### **Giftedness**

Giftedness, as a concept, was first documented in the 1920s (Terman, 1922). Since then, a number of definitions have been proposed in order to capture and define the construct. Some of these include:

“... exceptionally advanced subject-specific ability at a particular point in time...” (Matthews & Foster, 2005, p. 26).

“... the manifestation of performance or production that is clearly at the upper end of the distribution in a talent domain even relative to that of other high-functioning individuals in that domain...” (Subotnik, Olszewski-Kubilius, & Worrell, 2011, p.7).

“... a label granted to individuals for whom we can identify a learning pathway that leads to eminence...” (Ziegler, Stoeger, & Vialle, 2012, p. 196).

Kokot (2011), a South African researcher defined giftedness as an innate potential for a remarkable achievement in one or more areas that have value for a particular culture. The development of this potential is, however, dependent on a system of mutually constitutive influences within the individual child's inner and outer environment. Having reviewed a number of articles in this area, it is evident that there is little consensus for a universal definition for giftedness (Carman, 2013). The literature in the field of definitions of giftedness is based primarily on the Western paradigm and does not take into account the complexities and challenges of identifying giftedness in African contexts.

As the definitions above suggest, gifted learners can be viewed as having distinctive qualities of giftedness and/or having the potential to function at a higher cognitive level. Terman, in 1922, was one of the first theorists to make the link between one's innate ability and their performance on a number of outcomes. Terman's research enabled him to distinguish between learners in a classroom. He was able to identify learners who functioned at higher cognitive levels and possessed inherent qualities of what we now term giftedness.

While Terman's (1922) research focused solely on innate ability, Subotnik et al.'s (2011) research summarises the definitions of giftedness that were further developed by theorists such as Renzulli (1977) and Subotnik et al. (2011) to build on Terman's original understanding of giftedness and has broadened our understanding of giftedness today. They state that a gifted learner can be described as:

1. An individual who is born with higher functioning capabilities that can be identified through an intelligence measure.
2. An individual who is also found to have good emotional and social functioning in addition to their intellectual capabilities. In other words, the individual may be viewed as a well-rounded learner.
3. An individual who possesses the ability to be creative, self-motivated and complete a task in addition to their intellectual abilities.
4. An individual who has the ability to perform and excel in sports and performing arts.

In addition, in order for gifted individuals to reach their full potential, their abilities should be nurtured through appropriate environments, enhancing the gifted

learners' task-related performance (Terman, 1922). Subotnik et al. (2011) argue that it is not innate ability that can develop a gifted individual's potential but rather that the environment created can nurture the gifted individual's ability. There are two environmental factors that play a role in developing a gifted learner's potential, namely: a) the opportunity to continually practice the skill being developed, and b) access to opportunities (Subotnik et al., 2011). In terms of the first factor a gifted individual may have a natural talent in a sport or skill. With the opportunity to practice this skill, they will master the skill and eventually excel at it. The second factor deals with access. If a gifted individual is presented with an opportunity then the individual can utilise this platform to build on their intellectual abilities and develop their giftedness potential.

Subotnik et al. (2011) and Terman (1922) provide a school of thought that an individual's gifted ability is not only innate but that it can also be nurtured through supportive specialised environments for gifted individuals. In line with these arguments, giftedness education programmes are commonly implemented. Not only do these programmes enable the gifted to develop their innate abilities, they also provide the appropriate environment for this growth to occur. These programmes create a space for gifted learners to refine their skills and increase their overall intellectual performance (Subotnik et al., 2011).

Giftedness programmes have been built on the premise that gifted learners need a specialised curriculum to engage, nurture and develop their potential (Putallaz, Baldwin, & Selph, 2005; Tomlinson, 2005; Ziegler et al., 2012). As such programmes that target gifted individuals should include an academic component and/or an extra-curricular component. This ensures the appropriate level of intellectual stimulation to the extent that the learner is exposed to stimuli beyond their current world view (VanTassel-Baska & Brown, 2007). For example, programmes could include activities such as visits to cultural places of interest, musical lessons and sporting activities. In this way the gifted learner's intellect is extended beyond a purely academic dimension. This approach to gifted education aims to result in these scholars outperforming their peers and potentially becoming top achieving students in tertiary institutions. In order to achieve these intended goals and develop this trajectory, the interventions must be tailored to meet the needs of gifted learners.

Literature suggests these types of interventions can be designed and structured using two curriculum differentiation approaches, namely, an accelerated curriculum and/or an enrichment curriculum (Plucker & Callahan, 2014, Steenbergen-Hu & Moon, 2011; Subotnik et al., 2011). Giftedness interventions generally only incorporate one of these two approaches in their design. An accelerated curriculum approach, as first developed by Stanley (1976), is when gifted children are given additional school work from a grade above their current schooling year. In this approach learners complete the work for their current grade curriculum in a shorter period of time, when compared to other learners in the class. The gifted learners are then given additional content and activities to complete which are usually used for more senior graded learners. A programme centred on an enrichment curriculum approach encourages learners to engage in in-depth studying of an area of interest that does not form part of their current schooling curriculum. Through this additional learning gifted learners are thought to develop new knowledge as well as critical thinking skills (Subotnik et al., 2011).

### **Do These Programmes Work?**

There is little empirical evaluation research on giftedness programmes. In response to this, an extensive literature review was conducted, the findings of which are presented here.

The evaluation articles on giftedness programmes concentrate on two key themes, namely, the effectiveness of giftedness programmes and the limitations of evaluations on giftedness programmes. The following section will outline theme one in terms of the implementation considerations in order to increase the likelihood of effective giftedness programmes. These implementation considerations include: the correct identification of gifted learners; the most appropriate classroom approaches for gifted programmes; and the most effective design approaches for giftedness programmes (Plucker & Callahan, 2014; Steenbergen-Hu & Moon, 2011; VanTassel-Baska, Quek, & Feng, 2007). Theme two will be discussed thereafter.

**Correct identification of gifted learners.** In order for a giftedness intervention to be effective, the programme must target the appropriate learners. Worrell (2009), and Plucker and Callahan (2014), suggest that multiple screening measures should be used to identify and recruit gifted learners. The evaluations

reviewed used intelligence tests, scholar identity models, and teacher assessment of learners as measures for screening gifted learners (Whiting, 2009; Plucker & Callahan, 2014). Intelligence tests have been used in a number of studies and are often the first screening mechanism for identifying gifted individuals (Plucker & Callahan, 2014). Individuals who achieve a score or IQ of 120 and above for this test are considered gifted and should be selected for a giftedness programme. The scholar identity model developed by Whiting (2009) is based on the premise that if a learner develops their self-worth and excels in one area, such as a sport or in music, this will lead to the learner viewing him/herself as having the ability to exceed and remove the barriers of underachievement. This method includes practitioners working with individuals to develop their self-efficacy which in turn leads to the individual performing better in academic subjects. The practitioner of these programmes then identifies the gifted individual who is able to perform cognitively at this higher level. This method of screening is often used when an individual's gifted potential is not nurtured at an early age. In the third screening mechanism, teachers rate the academic and social constructs of a gifted learner according to a rating system they develop. These ratings may be viewed as subjective and not completely reflective of the learner's capability. This method has been used in the absence of formal assessment mechanisms or as a supplement to formal assessment. Plucker and Callahan (2014) support and advocate for the use of this screening method but advise that it should be used in combination with an additional screening mechanism.

Studies in the literature reviewed for this dissertation also indicate that careful attention should be paid to the mechanisms that are used when recruiting and selecting gifted learners from disadvantaged backgrounds (Plucker & Callahan, 2014). This is because the gifted learners from these communities may not have had the opportunity to develop their gifted potential and may not perform effectively on standard measurement screening tools. The researchers indicate that giftedness programme personnel should consider the context from which the learners derive and develop appropriate screening mechanisms. Worrell (2009) advocates for the use of multiple screening tools to assist in correctly identifying gifted individuals from disadvantaged communities, as one standard measure may not correctly identify a gifted learner from this community.

Considering the information above, implementers of a giftedness programme should consider the gifted individual's context and use more than one screening mechanism to ensure that they correctly identify gifted individuals for their programme. In addition, reliable and valid instruments should be used to ensure that the screening of gifted learners can be measured using standard criteria and is as objective as possible.

**Most effective classroom approaches.** The research revealed that the most effective model for classroom instruction is one that is prescriptive in nature (Gavin, Casa, Adelson, Carroll, & Sheffield, 2009; Tiesco, 2005; VanTassel-Baska et al., 2007). In other words, educators should follow a specified framework which is implemented using an accelerated approach (VanTassel-Baska et al., 2007). In the research this is referred to as educator prescriptive models. The frameworks / educator prescriptive models should include activity logs, lesson plans and classroom resources, all of which help the educator to plan and implement a giftedness intervention. A further study by Plucker and Callahan (2014) showed that when educators used a specified framework or prescriptive model, it led to an increase in student performance. This is also supported by Borko (2004) in a study on educator patterns. This study confirmed that the use of prescriptive models in the classroom does account for changes in academic behaviour and performance of learners in the classroom.

VanTassel-Baska and Brown (2007) reviewed eleven giftedness curriculum models. Through this work they suggested that the following components should be included in classroom practices for gifted individuals:

- Exercises conducted with the learners should make use of enquiry based strategies that allow learners to be active participants in the learning process. Learners should be taught to be creative problem solvers and decision makers through this process.
- Motivation of gifted learners is an important element in a giftedness programme. Educators of gifted learners should understand what motivates a gifted learner and ensure ways to motivate the gifted learner.

Considering the information above, the researchers recommend that implementers of giftedness programmes should use the educator prescriptive models as a framework for giftedness curriculum design.

**Most effective design approaches for giftedness programmes.** Research by Steenbergen-Hu and Moon (2011) has found that the accelerated approach of giftedness education is highly effective. In a meta-analysis of various programmes that made use of the accelerated approach, results indicated that gifted learners, in comparison to other learners in their age group, outperformed their counterparts on scores for standardised achievement tests both at school and university. The meta-analysis also indicated that the accelerated approach showed more improvement in the learner's performance than the enrichment model and advocates for the use of the first approach (VanTassel-Baska et al., 2007). These findings are congruent with earlier meta-analyses research of giftedness programmes that indicated that the accelerated approach is strongly correlated with a gifted learner's academic performance (Kulik, 2004). An additional result revealed by the research was that gifted learners in the accelerated programmes also showed a slight increase in their self-efficacy and confidence levels (Kulik, 2004).

### **What Evaluations Have Been Used and What Are Their Limitations?**

The second theme which emerged from the literature review was a focus on the limitations of current evaluation research on giftedness programmes. Most research of giftedness programmes consists of descriptive and correlational research (Neber & Heller, 2002; Plucker & Callahan, 2014; Yun Dai, Swanson, & Cheng, 2011). There are many academic papers proposing definitions of giftedness as well as detailing the selection criteria, but there are very few papers investigating whether giftedness programmes are successful. It is understandable that there is a lack of rigorous evaluations because conducting sophisticated methodological studies is challenging. Plucker and Callahan (2014) indicated that this research may be difficult due to the following reasons:

1. Implementing a randomised controlled trial with this population may not be possible due to small sample sizes and no available comparison group. This is because participants selected for gifted programmes have a



marked difference in IQ to the general population and thus a matched comparison group is difficult.

2. As it is difficult to conduct a randomised control trial to collect data, individuals use creative ways to collect data. This data, however, cannot be viewed as an empirical result and it is often not published.

The manner in which the research has been conducted results in two concerns: a) no rigorous evaluations conducted means we have a limited research base in this area, and b) with evaluators using creative research designs funders are less likely to donate money when objective results are not possible. The evaluator was only able to locate two published evaluation studies about the effectiveness of giftedness programmes; one is an evaluation of a summer school programme and the other a review of eleven giftedness programmes.

In the first study in the evaluation of the summer school programme for the German pupils academy, the evaluators used a process evaluation to ascertain whether the programme was implemented as intended, as well as a pre- and post-test measure to measure the short term outcomes (Neber & Heller, 2002). In this study the evaluators investigated the programme's activities using self-developed criteria. The results of process evaluation indicated that the educators used educator prescriptive models with clear instructions for the delivery of the giftedness activities. In addition the gifted learners felt that more activities could be included to further challenge/enhance their cognitive potential.

To measure the short-term outcomes the evaluators used pre-existing scales to test the learner's cognitive ability and motivational strategies. The results from the outcome evaluation indicated that the programme had a strong effect on the gifted learner's self-efficacy and this could impact the learner's ability to be further motivated to perform. The results also indicated that learners' self-regulatory learning practices, motivational beliefs and learning preferences all played a role in developing the gifted learners (Neber & Heller, 2002). The researchers recommended that these mechanisms should be considered for inclusion as elements in giftedness programmes. The evaluation was, however, not able to establish the causal link or show that the giftedness programme had an impact on the gifted learners' performance.

In the second study by VanTassel-Baska and Brown, (2007), the evaluators looked at the efficacy of giftedness curriculum models of eleven giftedness programmes. The evaluators developed an assessment tool based on features theorists in the field of gifted education had listed as important. The results from this study indicated that only six of the models studied showed an effect on the gifted learner's ability. The models listed as being effective were the Feldhusen Three Stage Enrichment Model, the Renzulli School Enrichment Triad Model, the Schlichter Talents Unlimited Model, the Stanley Talent Identification Model, the Sternberg Triarchic Componential Model and the VanTassel-Baska Integrated Curriculum Model (VanTassel-Baska & Brown, 2007). All these models include a prescriptive curriculum that the gifted educators should follow including sessions that require the gifted learner to be an active participant in the knowledge generation process. This research, however, does state that in each of the studies of these models there was a limited sample size and no comparison group and as such the findings from this study are less credible (VanTassel-Baska & Brown, 2007).

Researchers who have conducted reviews of giftedness programmes indicate that evaluations of giftedness programmes do not measure the causal link between programme activities and intended outcomes. The research tends to focus on either depicting the activities used in the programme or on the changes in the gifted learners' motivation and self-efficacy to perform better. From the literature review the evaluator concluded that very little causal research has been documented to investigate the link between the activities implemented in giftedness programmes and the intended outcomes. Despite the lack of evaluation research, researchers seem to make reference to a number of best practice examples of giftedness programmes which have been found to be effective.

### **Best Practice Programmes**

In the international arena there are three gifted programmes that are referenced (Neber & Heller, 2002; Mazzoli Smith, 2014; VanTassel-Baska et al., 2007) as best practice models which make use of the curriculum differentiation approaches mentioned above. They are the John Hopkins University Centre for Talented Youth in America, the German Pupils Academy in Germany, and the Duke Talent Identification Programme in America.

The Centre for Talented Youth based at John Hopkins University in Baltimore conducts an annual screening of American youth for inclusion in their giftedness programme. They define gifted individuals as learners who are bright and have the capacity to take on and address academic challenges (John Hopkins Centre for Talented Youth, 2014). Those selected after the talent search are then provided with the opportunity to attend academic summer camps with individualised tutoring. Through attendance at the camp gifted learners gain access to online courses that contribute to the development of the learner. In addition they are able to engage in challenging academic work alongside their gifted peers. John Hopkins Centre for Talented Youth (2014) provide a description of their summer activities:

Small group work, short lectures, writing exercises, debates, oral presentations, essays, laboratory investigations, and structured simulations are used to push students to deepen their knowledge, gain facility with new research methods and problem-solving techniques, and develop as independent, critical thinkers (John Hopkins Centre for Talented Youth, 2014,)

The online offerings for students include courses in writing, science and accelerated mathematics (Ybarra, 2005). In addition learners are encouraged to participate in out of class activities such as focused lessons for a sport or musical talent which further develop the gifted learner (Ybarra, 2005).

The German Pupils School Academy in Germany is another example of a best practice model for gifted interventions (Neber & Heller, 2002). The programme is implemented for German and European gifted learners aged 16 to 18 years old. The 17 day programme runs during the summer school holidays and is based on the enrichment model (Neber & Heller, 2002). The extra school curriculum activities are based on school subject material and are pitched at a level above the learners' ability. The programme model utilises small class sizes, with each class two educators and approximately ten to twelve learners. The ratio of learner to educator creates the space for the learner to receive individual feedback. Learners are also required to complete group-tasks based on the programme activities. These tasks are usually in the form of a report or a presentation. The programme's design aims to develop the learners' abilities and skills.

The Duke University Talent Identification Programme (TIP) (2014) is a programme that provides educational services/offerings to gifted learners in Grade 4 and above. There are different programmes depending on the grade of the scholar but the main elements of all programmes include a talent search, a residential summer study, e-studies (online learning programme), independent learning (learning available anytime), access to gifted resources and scholar weekends (short one day programmes). In addition, an individual mentor is assigned to a gifted individual to help facilitate learning. The programme is also based on an enrichment model. The TIP aims to foster the learners' giftedness through the mentorship relationship which assists learners with their specific needs (Duke University Talent Identification Programme, 2014).

In the extensive literature review of giftedness programmes it was shown that these three programmes are referenced as the base for which other programmes have been built. These three programmes together incorporate the foundational elements of what giftedness programmes should include, namely, a) appropriate screening mechanisms that correctly identify gifted learners, b) an accelerated or enrichment model with a prescriptive educator framework and c) small class sizes which enable effective learning.

In the local context giftedness education has been prevalent in South Africa since the 1960s (Oswald & De Villiers, 2013). Oswald and De Villiers (2013), who researched programmes for gifted education prior to 1994, noted that South Africa was the only country in Sub-Saharan Africa where giftedness education was considered. During apartheid only those classed as White learners were able to access giftedness programmes offered by the State. These programmes took place at special education centres for gifted learners. Upon disbanding apartheid, South Africa began to participate in discussions with international counterparts about how education for gifted learners could be addressed in the country. Subsequently, the South African Department of Education made a decision to close the special education centres and incorporate gifted education into the formal curriculum at all schools (Oswald & De Villiers, 2013). In addition in 1994, the South African delegates who attended the World Conference on Special Needs Education in Salamanca signed the Salamanca Statement that emphasised support for diverse learning abilities and needs. As a result, only some schools in South Africa now offer

giftedness programmes (Oswald & De Villiers, 2013). These schools are Sun Valley Primary School in the Western Cape, Glenwood High School in Kwa-Zulu Natal and Radford House Primary School in Gauteng.

The Sun Valley Primary School programme identifies learners with potential from disadvantaged backgrounds in the Western Cape and provides the learners with a full scholarship to the school (Sun Valley Primary School, 2014). The learners are then given access to better resources, appropriately qualified educators and a support structure which assists these individuals with their learning. In addition, the learners have access to extra-mural activities such as participating in sporting activities or playing a musical instrument which can assist in the further development of the learner's potential. Sun Valley does not make use of the curriculum differentiation approaches but rather uses a comprehensive support structure to develop the learner.

The Radford House Primary School in Johannesburg is also a school for gifted learners. They provide a definition of giftedness:

“A gifted child is one who, in some aspect of human potential and/or achievement, is far more advanced than others of the same chronological age and the same cultural and educational background” (Radford House, 2014, FAQ Section, para 1).

Radford House also advocate that a gifted learner's potential is innate and given the right environment, can be nurtured appropriately to further enhance a learner. The Radford House Primary School builds on this premise and makes use of the accelerated model of curriculum differentiation for gifted learners. Radford House Primary School learners are between the ages of seven to twelve years. Learners who attend this school are screened by an educational psychologist, the principal and a relevant class educator. Learners who meet the criteria, including the ability to understand complex concepts, rapid learning ability, high functioning critical thinking skills and interests in areas other than academic subjects are then selected and recruited into the schooling system. These learners receive an accelerated National South African Curriculum. Each learner is monitored and their work pace is set accordingly so that learners can further develop their gifted ability and continue to perform at a level higher than their age counterparts.

Glenwood High School in Kwa-Zulu Natal also makes use of an accelerated curriculum approach for their gifted learners, but only for learners in Grades 8 to 11. This school uses the learner's IQ score in order to assess their eligibility for the programme. An IQ test score of 120 and above enables learners to be placed in the in-class giftedness programme. Learners are then given a compressed National Curriculum which is completed by July of the school year. In the latter part of the year learners are exposed to different topics which are presented by university lecturers. Learners are given a syllabus to complete that is related to these additional topics as well as additional reading and mathematics work. By using this approach Glenwood High School fosters an independent learning attitude for the gifted learner (Mogorosi, 2014).

These three programmes together incorporate the foundational elements of what giftedness programmes should include, namely, a) appropriate screening mechanisms that correctly identify gifted learners, b) an accelerated or enrichment model with a prescriptive educator framework, and c) small class sizes which enable effective learning. In all three programmes, the schools use their specialised school environment to develop the gifted learner. The programmes are run during school hours with the assistance of school educators and, in some cases, tutors from universities. Tutors and educators help to monitor the learner and provide the appropriate stimulation for the gifted learner. In all three contexts the school has provided the space in the curriculum and the funding to ensure that a giftedness programme was implemented. Until recently no formal out of school programmes existed for scholars from underprivileged backgrounds who did not want to be removed from the community environment.

In 2012 the Imibala Trust, who work with learners from underprivileged backgrounds, identified that there were no giftedness programmes for gifted learners within these communities. The only giftedness programme available required that the gifted learner attend school in another area and thus could not remain in their community. The Imibala Trust staff wanted to design a programme where a learner received giftedness education but could remain in their own community and in their residential school. It was on this basis that the Imibala Trust staff together with the Metropole East Education Department (MEED) decided to pilot a programme that

would address the need of local gifted learners and incorporated aspects of all three local giftedness models. This programme is the evaluand of this research.

## **The Imibala Trust**

The Imibala Trust,<sup>1</sup> a public benefit organisation, was founded by Gaynor Rupert in 2001. Gaynor Rupert identified that children from disadvantaged communities in the Helderberg region did not have means to purchase the appropriate school clothing. Together with friends, Gaynor Rupert established the Imibala 'Sponsor-a-child' programme. In this programme community members sponsor the cost of a uniform for a learner from a disadvantaged community. In addition to their uniforms learners are also provided with Imibala computer classes and Donna Downie art classes.

In order to have sufficient funding for these activities, the Imibala Restaurant and Imibala Arts Pty Ltd (an art gallery) were founded. The restaurant is located in the same area as the charity office and serves the public. The gallery exhibits local artists' work and hosts exhibition nights to sell these pieces. Profits from the restaurant and the gallery sales are used to fund the Sponsor-a-child programme.

In 2012, Isobel Roberts, a volunteer with the Imibala Trust, identified through consultations with MEED that only a few South African programmes existed for gifted and talented learners. She proposed that the Imibala Trust develop a gifted programme for disadvantaged learners in the Helderberg region. As a result, the Imibala Gifted and Talented Enrichment (GATE) Programme was conceptualised in 2013, for intended roll-out in 2014.

## **The Conceptualised Programme**

Before presenting any design ideas eight members of the GATE programme planning team as well as a student programme evaluator visited Sun Valley Primary School in the Western Cape, where a giftedness programme for learners from

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<sup>1</sup> All information related to Imibala as well as the evaluand, unless otherwise cited, is referenced as follows: I. Roberts and M. De Villiers, personal communication, February 27, 2014.

disadvantaged backgrounds is implemented. The visit to this school helped the programme staff ascertain how the programme functioned. From this interaction two important design components for giftedness education were realised:

- Class size was an important consideration. It was found that smaller class sizes would be the most appropriate and beneficial; and
- Parent volunteers were an important element for the successful implementation of the programme. Parents encouraged the gifted learner to continue developing by showing a keen interest in their work and helping out with tasks when needed.

Following this visit, the GATE programme planning team began to formulate the design of the GATE programme. By mid-2013 the GATE programme was envisioned as follows:

The programme would be intended for Grade 5 learners who were identified as possessing the necessary potential to succeed and be top achievers in their schooling curriculum (in other words gifted learners). The programme was conceptualised as after-school programme for the period of a year. In other words, GATE would provide learners with additional content-related classes, as well as extra-mural activities after school. The envisioned outcomes for the GATE programme included: increased overall academic school performance, improved problem solving ability and enhanced socio-emotional development.

### **The First Evaluation Research on the Proposed GATE Programme**

In 2013, a University of Cape Town Master's student, Reitumetse Mogorosi, began to evaluate the design and conceptualisation of the GATE programme. Mogorosi's (2014) evaluation research aimed to answer the following evaluation questions:

1. How is giftedness defined?
2. What criteria are used to select gifted children?
3. What is the optimal age for recruiting learners into an enrichment programme?



4. What appropriate activities are necessary to yield the targeted programme outcome?
5. What are the most appropriate guidelines for engaging with important stakeholders of the programme?

The following section will summarise the findings to each of the evaluation questions.

**1. How is giftedness defined?** After an extensive literature review, Mogorosi (2014) concluded that there is no universal definition for giftedness. Her finding is consistent with that of Carman (2013) who undertook similar research. Based on the lack of agreement, Mogorosi (2014) documented various definitions that encompassed different dimensions of the construct. Based on conversations with GATE programme staff, Mogorosi (2014) was able to find the following two definitions which were aligned to the GATE stakeholders' initial conceptualisation of giftedness:

“ . . . gifted are individuals who perform highly in socially valued ways” (Cigman, 2006, p. 1).

“ . . . [an] exceptionally advanced subject-specific ability at a particular point in time such that a student's learning needs cannot be well met without significant adaptations to the curriculum” (Matthews & Foster, 2005, p. 26).

Mogorosi (2014) used these two definitions in order to formulate the following definition of giftedness for the Imibala GATE programme:

“Within the South African public school context, learners who display exceptional potential and/or performance in learning generally, or specifically (in Mathematics and English), with potential referring to heightened curiosity and passion for learning, even in the absence of high performance” (Mogorosi, 2014, p. 23).

**2. What criteria are used to select gifted children?** Mogorosi (2014) found consensus for the most appropriate measures to be used in the selection and recruitment of gifted learners into these kinds of interventions. The primary and most reliable measure was that of achievement tests (Carman, 2013). Alternative

screening methods for similar programmes in the past have included parent appraisals, co-curricular activities, and school or counsellor recommendations (Carman, 2013). Whilst Carman (2013) noted that intelligence tests were the primary screening measure, it is common to use a combination of screening mechanisms. Before making a recommendation on the most appropriate selection approaches for the GATE programme, Mogorosi (2014) argued that intelligence tests are not always sensitive to the cultural and social backgrounds of learners from a particular area or schooling system. This usually accounts for the under-representation of previously disadvantaged learners on gifted programmes. It is for this reason that Mogorosi (2014) recommended the inclusion of additional measures over and above intelligence tests to evaluate learner behaviours and attitudes for the GATE programme as the programme was targeting South African learners who are previously disadvantaged. Mogorosi (2014) proposed that a comprehensive selection process be used to identify learners for the Imibala GATE programme. She proposed the following three phase selection process:

- Phase one consisted of the Imibala personnel administering an intelligence test to all Grade 4 learners. It was suggested that those learners with an IQ score of 120 and above should be included in the programme. The GATE programme staff initially wanted to recruit 20 learners. It was hoped that after phase one this target may have been reached. Should GATE not achieve the targeted number of learners, however, Mogorosi (2014) designed a phase two.
- The proposed phase two involved a teacher's score for the learner. Each learner's teacher would rate them according to a standardised checklist for giftedness ability. Those learners who received the highest teacher ratings would then be included in the GATE programme.
- Phase three (again if the desired capacity had not been filled after the teaching ratings) included a dynamic assessment with an emphasis on advanced problem solving. Learners would be given problem solving tasks and rated according to their ability to provide appropriate solutions to the problems. Those who were able to solve the tasks would be included in the programme.

**3. What is the optimal age for recruiting learners into an enrichment programme?** In conjunction with the measures used to select learners into the giftedness programme, Mogorosi (2014) also assessed the optimal age for recruitment to take place. She noted that Silverman (2009) indicated that the optimal age for recruitment into gifted programmes is between five to eight years old. Silverman also stated that instruments currently used to assess a child's gifted ability at aged nine are inadequate. The scores generated by these instruments may be an underestimation of the child's giftedness. In addition, testing a child under the age of four may yield unreliable results as their behaviour at this age is unpredictable. This strengthens the notion that optimal age for recruiting gifted learners is five to eight years old. The American Association for Gifted Children (AAGC), which is based at Duke University, also supports this view. AAGC state that "at school age, testing can help document a child's ability and give parents a tool with which to advocate for appropriate educational programs" (Duke University Talent Identification Programme, 2014, Identification section, para 3). Bearing all the above in mind, Mogorosi suggested that learners should be selected and recruited as early as five years old as intelligence tests administered with learners aged nine are unable to correctly detect the ability of the gifted learner as the test is pitched too low. Imibala, however, was adamant that Grade 4 learners were the identified target population for their programme. As such while the literature states the target audience should be younger, Mogorosi (2014) adapted her recommendation to be in line with Imibala's desired population.

**4. What appropriate activities are necessary to yield the targeted programme outcome?** In her dissertation Mogorosi (2014) discussed a wide array of activities that could be included in the GATE programme. Her final recommendation for the programme (based on the desired outcomes of the GATE stakeholders) included a focus on in-depth knowledge for Mathematics and English that should be built upon an initial baseline assessment of the learners' proficiency in the two areas in order to strengthen academic success. In English she suggested that the learning should focus on fluency, vocabulary and use of language with cognisance that English may not be the first language for learners in the programmes. She went on further to state that the "curriculum should focus on developing learners' problem-solving skills, with an emphasis on analysis and

application of knowledge” (p. 32). In so doing the learners may be able to apply the learnings from this area to their other school subjects and thereby increase their ability to perform better academically overall. In addition to the academic component, Mogorosi also proposed that the sessions include elements for motivating the gifted learners as well as engaging with social and emotional challenges through an exclusive learning environment. By this she meant that the GATE personnel should create a space for the learners separate from their school classroom where they can have the opportunity to improve their academic abilities and develop their coping skills. Mogorosi proposed that the programme should include additional support to the learners by including a life skills component, computer classes and access to counselling services. Learners from disadvantaged communities often face barriers such as lack of access to technology facilities and counselling services which inhibit their learning. By including these components the GATE personnel can provide the opportunity for the gifted learner to access these services, and in that way increase their potential to succeed academically and develop social coping skills which will increase their ability to adapt and perform.

In support of focused intervention sessions, Mogorosi (2014) suggested that Imibala make use of an after school model for the GATE programme. In other words, learners would attend sessions at the Imibala Trust Offices after school or on weekends. Mogorosi suggested that in this way the GATE programme sessions would complement and enhance the learning received by the gifted individual at school. She also suggested that through the GATE programme sessions the gifted learners would be able to learn about new areas of work and this would not affect their current classroom work. Mogorosi concluded that as the Imibala Trust is an external organisation to the department of education and piloting an intervention, it is appropriate that they implement an enrichment model which can be evaluated.

**5. What are the most appropriate guidelines for engaging with important stakeholders of the programme?** In her chapter on stakeholder engagement Mogorosi (2014) wanted to outline the role of each of the stakeholders involved in the programme and provide potential guidelines for the stakeholders. What does become evident in Mogorosi’s chapter on stakeholder engagement is that the GATE programme requires careful engagement with critical stakeholders in order to increase the likelihood of the programme’s success. The programme should engage

with the critical stakeholders in the learner's life. These critical stakeholders include the educators, parents and the learners themselves (Mogorosi, 2014). The roles these individuals play differ. Educators may observe, rate and select gifted learners into the programme using already developed checklists and observation schedules (Mogorosi, 2014). In addition, educators with gifted education experience can develop appropriate curricula for gifted learners. Educators can also provide GATE personnel with key information from their observations of the gifted learner in the classroom. If an educator identifies a positive behaviour that the learner exhibits and has led to increased performance, this information could be used to further motivate the learner and thus increase their performance, and/or highlight areas that GATE personnel could concentrate on to further enhance the learner's ability. Mogorosi (2014) indicated that in 2013 GATE personnel had begun the process of engaging with educators.

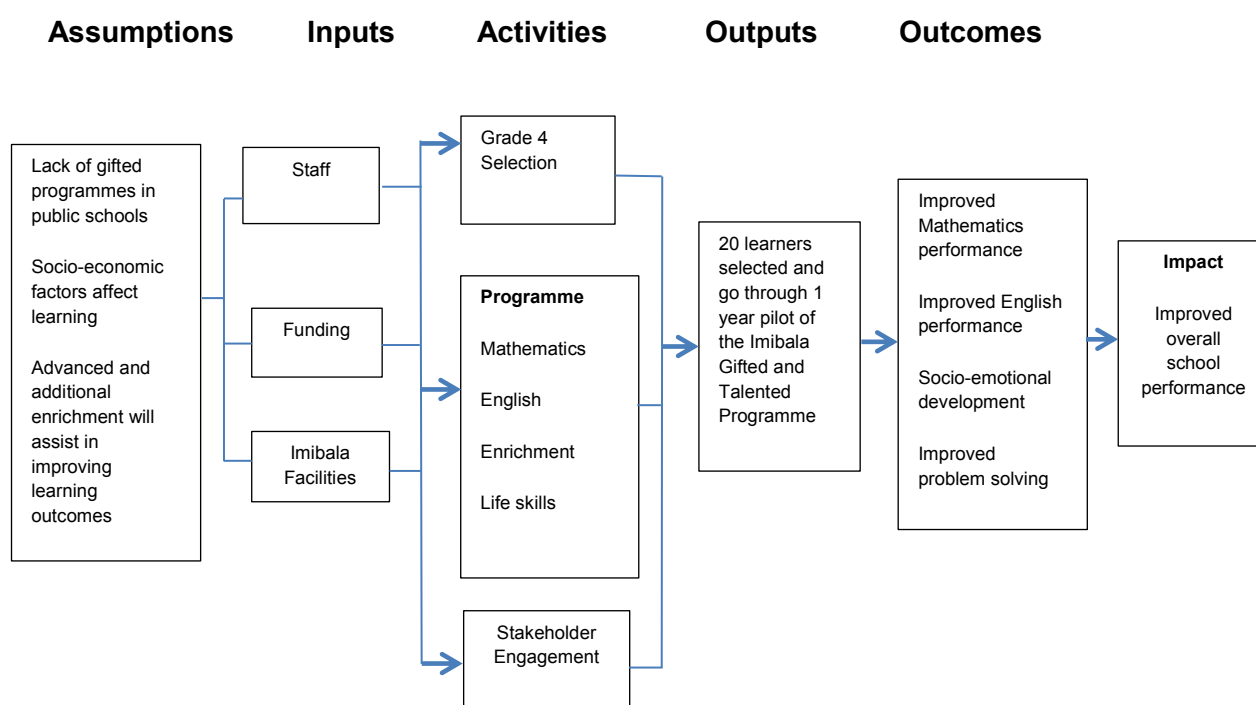
Similarly with parents, their involvement is an important factor when engaging with a gifted learner. Grantham, Frasier, Roberts, and Bridges (2004) suggest that parents could complement a giftedness programme and assist the learner by being actively involved in the learning process. This would also enable the parent to understand and address the learner's needs in the home environment. Parents are critical stakeholders as both the home environment and the parents' observations are vital for fostering a culture of learning for the gifted learner. Parents can do this by encouraging the learner in their daily activities and in so doing contribute to furthering the learner's growth. Mogorosi (2014) suggested that GATE personnel should take into account the socio-economic backgrounds of the parents, as they may not have the resources to support the learner. She also recommended that the GATE personnel consider a parent-involvement programme as part of their stakeholder engagement strategy.

Lastly, and most importantly, engagement with the gifted learners was deemed most important as this is the foundation upon which the Imibala GATE programme is positioned. Mogorosi's (2014) programme theory in consultation with the GATE personnel shows two ways GATE personnel will engage with the learners. Firstly, as this is a pilot intervention the GATE personnel have chosen to work with a small group of learners. In this way the GATE personnel can see if the programme is appropriate for the gifted learners. Secondly, through feedback from the learners the GATE personnel can improve the programme and tailor it more appropriately for

future rollout. It is therefore critical that the GATE personnel understand the selected gifted individuals and see them as important stakeholders in this pilot phase of implementation.

In her research Mogorosi (2014) identified a secondary, but potentially equally important, stakeholder for the GATE programme, namely the Western Cape District Office in the Department of Basic Education. Mogorosi stated that the Western Cape District Office, as a stakeholder, might assist in supporting learners who experience barriers to learning in the classrooms. As this is a pilot intervention, the evaluation of the GATE programme may seek to inform the policymakers within the Department of Education about vital lessons learnt when working with gifted learners. It may form the basis for which motivation is given to expand interventions such as these. Thus, the involvement with the Department of Education cannot be overlooked.

Based on the research conducted, recommendations proposed, and in consultation with Imibala stakeholders, Mogorosi's (2014) end result of her evaluation research was the development of the following programme theory for the GATE programme. Figure 1 is the diagrammatic representation of the programme theory.



*Figure 1.* Programme theory for the Imibala GATE Enrichment Programme (Mogorosi, 2014)

The programme theory proposed by Mogorosi (2014) is based on the curriculum differentiation approach for gifted learners. The proposed programme theory was intended to be used to plan the implementation of the programme activities during the pilot year in 2014. The GATE programme theory proposed by Mogorosi aimed to focus mainly on one aspect of curriculum differentiation, namely enrichment, whereby learners do an in-depth study of an area they have not covered in the classroom. In addition the GATE programme included content acceleration for two school subjects, namely Mathematics and English. By incorporating these two aspects, Mogorosi proposed that the GATE programme activities could result in improved overall school performance of the learners in the programme. If the programme receives favourable results after the first year of implementation, the GATE programme staff can present these findings to current and potential funders.

### **2014 Evaluation of the GATE Programme**

The GATE programme was implemented as a first-year pilot in April 2014. Based on this, the evaluator conducted a process evaluation in order to assess whether the programme had been implemented according to the proposed plan by Mogorosi (2014) as detailed above. A process evaluation is important as it aims to understand if a programme has established its operations and services well, particularly in the rollout of a new programme (Rossi et al., 2004). The process evaluation is often of a formative nature as its primary purpose is to provide useful feedback to staff and sponsors of the new programme (Rossi et al., 2004). Based on the pilot status of the programme, the evaluator also investigated the short term outcomes of the programme. In other words the evaluator investigated whether any changes had been observed in the GATE participants.

The following evaluation questions guided the evaluation:

**Process evaluation questions:** Mogorosi's (2014) evaluation documented an implementation plan and programme design based on international best practice. That dissertation was used as the programme plan to which the pilot implementation of the GATE programme compared. The following questions assessed whether the proposed guidelines by Mogorosi were adhered to.

Questions related to programme organisation/plan:

1. What selection process was utilised in order to select learners onto the programme?
  - a) Did the GATE programme staff use the recommended selection process?
2. What GATE programme activities were implemented during the pilot year?
  - a) Were these the intended activities?
  - b) Would these activities lead to the intended outcomes?

Questions related to service utilisation:

3. Who received the GATE programme?
  - a) Are these learners part of the target population?
    - i) Are these learners the optimal age?
  - b) Did all learners complete the programme?
  - c) How many programme activities did each learner attend?

Questions related to service delivery:

4. Who delivered the programme?
  - a) What were their qualifications?

**Outcome evaluation questions:** In the case study component of this research Rossi et al. (2004) state that an evaluator needs to “assess the extent to which the programme produces a particular improvement by measuring the outcome, the state of the target population or social condition that the programme is expected to have changed” (p.231) has occurred. For this component the evaluator identified the following short-term outcome evaluation questions:

1. Did the programme participants’ overall school performance increase by the end of the programme year?
2. Did the learner’s performance increase in English and Mathematics by the end of the year?
3. Did the learner’s self-efficacy improve by the end of the year?





## **Chapter two**

### **Method**

This section will report separately on the method undertaken for the process evaluation and the short-term outcome evaluation. The process evaluation section will detail the procedures followed in order to answer the corresponding evaluation questions. This section will be structured according to each category of process evaluation questions. The structure of the short-term outcome evaluation section will conform to a typical social science method chapter.

#### **Method for Process Evaluation**

##### **Procedure for programme organisation/plan evaluation questions**

A semi-structured interview was conducted with two GATE programme staff (the programme manager and Imibala's international education consultant). The GATE programme staff gave verbal consent prior to the interview agreeing to participate in the research. The interview took place at the Imibala Trust offices in October 2014 and lasted just over an hour. An informal interview schedule was developed, these questions mainly being used to facilitate conversation about the implementation aspects of the GATE programme. These questions can be found in Appendix A. The interview enabled the evaluator to elicit responses detailing the programme activities which were implemented as well as the selection process that was followed.

The evaluator also reviewed the GATE programme first and mid-year reports and the GATE programme activity sheets in order to evaluate the implementation of the intended activities.

After the interview and the review of the GATE programme documents, the data obtained from the programme manager, educational consultant and the GATE programme documents was compared to the intended plan and design as recommended by Mogorosi (2014). The results of which are discussed in the next chapter.

## **Procedure for service utilisation evaluation questions**

The evaluator used the GATE programme mid-year report and the interview with the GATE personnel in October to evaluate the service utilisation of the GATE programme. The GATE programme report contained demographic information about the participants who partook in the GATE programme activities and helped the evaluator establish if the correct target population had been reached. The evaluator also used the GATE programme report to evaluate the number of sessions each participant attended and the learners' exposure to the programme sessions as well as whether there were any drop-outs during the programme. Findings from this review will be documented and discussed.

## **Procedure for service delivery evaluation questions**

As part of the interview with the GATE personnel the evaluator included questions about who delivered the GATE programme in order to evaluate whether the recommended facilitators were used. The evaluator used the data obtained to compare Mogorosi's facilitator recommendations to the actual facilitators used in the delivery of the programme. The findings of this section will be critiqued based on guidelines and best practice standards reported on in the social science literature and reported in the next chapter.

## **Method for Short-term Outcome Evaluation**

### **Research Design**

A mixed-method (quantitative and qualitative) case study design has been used to determine the short term outcomes based on nine learners who participated in the pilot GATE programme and their individual cases will be commented on in the results section of this dissertation.

### **Participants**

All of the participants who completed the GATE pilot programme in 2014 were included in the research (n=9). The population was made up of eight female and one male learner, all of which were in Grade 5. There were three learners from

Somerset-West Methodist Primary School, two learners from Firgrove Primary School, two learners from Danie Ackermann Primary School, one learner from ACJ Phakade Primary School and one learner from Solomon Qaytana Primary School. Table 1 provides the demographics details of the learners in the GATE programme.

Table 1

*Demographic information of the learners in the GATE programme*

Participant	Age	Race	Number of people who reside in the house	Number of guardians
Participant 1	10	Black	3	2
Participant 2	11	Coloured	4	2
Participant 3	10	Black	6	2
Participant 4	11	Coloured	5	2
Participant 5	10	Black	7	1
Participant 6	11	Coloured	3	4
Participant 7	11	Black	6	2
Participant 8	10	Coloured	5	2
Participant 9	11	Black	6	2

### **Measures, Procedure and Data Analysis for Short-term Outcome Evaluation**

The programme aimed to increase the Mathematics, English and overall school performance of gifted learners. The evaluator obtained three Grade 5 school reports during the year of 2014 (1st term, 2nd term and 3rd term). Due to the hand-in date of this dissertation, the 4th term was not able to be included. Due to the fact that the population size was small, no valid statistical procedures could be conducted on the performance marks of each learner. Instead these are reported as descriptive statistics in the results chapter.

A semi-structured interview was conducted with each of the participants in the GATE programme by the evaluator at the Imibala Trust premises in Somerset West (see Appendix B). The results will be presented in a case study format using quotes from the interviews to report from the learner's perspective how the programme has helped them, and what they think could be changed (Patton, 2002).

In addition a subscale was used to measure the self-esteem and self-efficacy of the GATE participants.

## Measuring Instruments

The questionnaire used for the study to measure self-esteem and self-efficacy contained two subscales, consisting of a total of nine items. A 4-point Likert scale was used to obtain responses. The questionnaire included an additional seven items to obtain participants' demographic details. The questionnaire was translated into Xhosa as the learner's first language was not English, however, during the first administration of the questionnaire the participants all chose to speak English and the evaluator chose to administer all the questionnaires in English with the participants. The questionnaires were administered at the Imibala Trust offices in Somerset West during the GATE programme session. For this study, the multidimensional Self-Esteem Questionnaire and a self-developed one item self-efficacy scale was used. The measure was administered in May 2014 as a pre-test, mid-programme in July 2014 and in October 2014 as a post-test.

**Self-esteem.** The 8 item DuBois, Felner, Brand, Phillips, and Lease (1996) School Self-Esteem Questionnaire was used to measure the gifted learner's self-esteem (Items 1 to 8 in Appendix C). A study conducted by Wild, Flisher, Bhana, and Lombard (2005) tested the appropriateness of the DuBois et al (1996) questionnaire for the South African context. The results indicated the scale to be a good measure for self-esteem in adolescents from disadvantaged communities. As such this scale was chosen for this research. Wild et al. (2005) reported good internal consistency, with a Cronbach alpha of .70. Participants were required to respond to statements on a 4-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). A high score on the scale indicates high self-esteem.

**Self-efficacy.** The 1 item self-developed self-efficacy was used to measure the gifted learner's self-efficacy (item 9 in Appendix C). A high score on the scale indicates high self-efficacy.

The scores for each administration were tabulated and recorded in each of the case studies. All the data collected was stored in a locked facility in the evaluator's office. The findings will be reported in the case study of each participant in the next chapter.

## **Ethical considerations**

Permission to conduct the research was requested and granted by the Commerce Faculty's Ethics in Research Committee at the University of Cape Town. As the learners were minors, permission was requested and given by parents of the participants in the GATE programme. Parents completed consent forms which were collected and stored securely in a locked cabinet in the evaluator's office (See Appendix D). In addition verbal assent was received from the children when completing the scales and participating in the interviews.

## **Chapter three**

### **Results and Discussion**

The results from this evaluation are presented in two parts: those relating to the process evaluation will be presented first, followed by the short-term outcome evaluation of the GATE programme. The discussion relating to each section's results will be presented after the results have been reported. The evaluator will present the findings according to each of the evaluation questions posed. Please note that as the results have been predominantly based on interviews with the GATE personnel and the participants, footnotes have been used to reference the personal communication so as to not interrupt the reading flow of the results. In addition the evaluator also acknowledges that the results presented represent the evaluator's interpretations of the data collected.

#### **Results for the Process Evaluation**

##### **Programme organisation/plan**

**GATE programme selection process.** Evaluation question one aimed to determine what selection process was utilised by the GATE personnel and whether this was the recommend selection process by Mogorosi (2014). Looking back at Chapter one Mogorosi suggested a three phase selection process. Mogorosi suggested that in phase one the GATE personnel should administer an IQ test to all the learners who were nominated by their school to participate in the GATE programme and select learners who achieved an IQ score above 120 to progress to the next phase of selection. In phase two she suggested that the GATE personnel involve the educators of the learners. These individuals could be given score sheets with which they would rate each learner. Learners who received the highest scores on the rating scale would be included into the GATE programme. Lastly, Mogorosi suggested that, in phase three, the GATE personnel use a dynamic problem solving assessment which included giving learners real world problems and asking them to think about solutions for these problems. The assessment would help the staff select learners who are able to provide solutions to the problem-solving tasks exercises.

The following section details the selection process that was followed by GATE personnel. This information was ascertained through interviews and as such is referenced according to personal communication<sup>2</sup>.

- Pre-selection phase – The GATE personnel invited educators from the twelve beneficiary schools of the Imibala Trust School Sponsorship project to participate in the Imibala GATE programme. Only six schools responded to the call to participate in the project. An introductory meeting was held at the Imibala Trust premises to discuss the programme with the educators from the school. After the meeting five school principals decided that their school would benefit from participating in the GATE programme. The schools included: Solomon Qatyana Primary School, Somerset-West Methodist Primary School, Firgrove Primary School, Danie Ackermann Primary School, and ACJ Phakade Primary School. The school principal at each of the schools then nominated an educator from the school to be the liaison between the school and the GATE personnel.

- Phase one – GATE personnel requested each appointed school educator to send them the school reports of those Grade 4 learners who were deemed to be the highest achievers in the grade. In personal communication with the GATE personnel in February 2014 they indicated that each of the five schools provided their entire list of Grade 4 learners with their corresponding marks in English and Mathematics from the Annual National Assessments (ANA) at end of Grade 4. The GATE personnel reviewed these lists and identified the top two to three learners at each school (n=17). These learners were then selected to progress to the next phase of the selection process.

- Phase two – In this phase the GATE personnel consulted with a local psychologist who advised what assessment should be used in the selection process. The psychologist cautioned that an IQ test can only measure a gifted learner's academic ability and that the GATE personnel should also find a way to assess the learner's creative ability to solve problems. The psychologist advised that a dynamic interactive assessment in addition to a generic IQ test should be used to identify gifted learners. The GATE personnel, choose to conduct their own cognitive

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<sup>2</sup> I. Roberts and M. De Villiers, personal communication, October 23, 2014.



assessment (see Appendix E) in February 2014 which they developed by integrating a number of activities drawn from generic IQ tests. The assessment was not administered to each individual child, but rather was a group assigned task.

Prior to the cognitive assessment the GATE personnel appointed a group of facilitators who were tasked to observe the learners whilst they completed the cognitive assessment. The facilitators were individuals who worked for the Imibala Trust sponsorship project as well as the independent educational consultant who worked for the GATE programme. The GATE personnel set the following criteria for the facilitators to rate the learners during the process. The facilitators were to document which learners took on a leadership role in the group activity and which learners chose to complete the assessment without help from their team. The facilitators were also asked to note which learners provided alternative answers to the questions in the assessment and how they communicated this to the group. The GATE personnel did not give the facilitators a standardised reporting form to complete but asked them to document their observations for discussion after the assessment.

On the day of the assessment the 17 learners (n=17) were divided into small groups of three or four participants. The learners were then asked to complete the tasks in the cognitive assessment as a group. Each group was asked to identify a learner in the group who would report back to the bigger group about the answers generated in the small group activity. The facilitation team was present in the room during the completion of the activities and made notes about what they observed about the learners during this process. After the cognitive assessment activities were completed, the facilitators had a discussion about their observations. The facilitation team used the criteria they had set earlier to recommend that only 14 (n=14) of the 17 learners (n=17) should progress to the next round of selection. It is important to note here that the information presented was based on recall from the interviewees. There were no written notes/observation reports kept, nor was the discussion meeting minuted. The evaluator is therefore unable to report specifics on why the 14 learners were chosen.

- Phase three – In this phase the GATE personnel in conjunction with the Iziko Museum Education Department implemented a four week museum programme (one

site visit per week). Learners were taken to four different heritage sites in the Cape Town area and staff from the museum explained the history and importance of each site. Initially the GATE personnel had been advised by the Iziko Museum Education Department that their staff would have an assessment for the learners at the end of each week. There was, however, only one worksheet administered by the museum staff at the end of the four site visits. The worksheet included basic questions about the four sites that learners visited during the holiday programme with the museum staff (see Appendix F). The GATE personnel did not implement a selection process after this phase as all the worksheets completed by all the learners were of a good quality. All 14 learners (n=14) thus progressed to the next phase of selection.

- Phase four – In this phase the GATE personnel devised one worksheet and one project for the learners to complete after they have completed the holiday museum programme (See Appendix G). The worksheet was completed by the learners during a GATE session, whereas the project was completed by the learners at home. In the worksheet the learners were asked to describe what they enjoyed about the visits to the various sites. The individual project required the learners to do research about the sites they visited and provide further information thereof. The programme facilitators (n=2) reviewed the worksheets and individual projects for selection of the final GATE participants. The GATE personnel explained that they reviewed the projects to assess who did the best with the tasks allocated to them. In other words the individual projects that showed the learners who had the ability to respond intellectually to the task. There were no formal criteria set for reviewing the worksheets and the projects.

Following these four phases, nine participants (n=9) were informed of their successful selection into the GATE pilot programme which would be implemented in 2014. The nine learners accepted the opportunity to participate in the programme and were officially enrolled onto the GATE pilot programme in May 2014. In reviewing the recommendations Mogorosi made in 2014 and the process implemented by the GATE personnel, it is evident that the GATE personnel did not follow the recommended selection process. The process that was implemented was not based on the literature gathered by Mogorosi (2014) about effective and appropriate selection and recruitment procedures for giftedness programmes. Instead the GATE personnel developed each phase of the selection process as it

progressed. While Mogorosi's (2014) selection process was designed for the purposes of the GATE programme and was grounded in social science research, GATE personnel viewed the evaluation design report as a guideline with recommendations. This would explain the difference in approaches used, however, the manner in which selection was conducted still needs to be critiqued.

In phase one the GATE personnel decided to use a cut-off mechanism to select learners who had done well by achieving a high percentage for Mathematics and English on the Annual National Assessments (ANA). The Annual National Assessments (ANA) are an assessment of a learner's academic performance against a standardised national assessment. The ANA's are not specifically designed to measure gifted individuals' abilities and whilst the learners might perform well on the assessment it does not provide adequate evidence that these individuals are gifted (Spaull, 2013). The GATE programme could also have used the scholar identity model which considers the gifted learners potential through excellent performance in areas such as sports and music to identify the gifted learner (Whiting, 2009). The GATE personnel would still have needed to assess the learner's giftedness ability against a standardised measure of intelligence such as an IQ test which has been established as a reliable and valid method to identify gifted learners (Worrell, 2009). Radford House Primary School and Glenwood High School both use a standardised IQ test with a predetermined score of 120 and above to assess a learner's giftedness ability to be selected onto their giftedness programmes (Mogorosi, 2014). These are areas of consideration for the GATE personnel for future selection processes.

The GATE personnel chose to implement a self-developed cognitive assessment which included components of various IQ tests with the learners in phase two. This assessment was not piloted with a population of known gifted individuals to ascertain if the outcome of the assessment would help establish if a learner was gifted or not. In other words, the assessment used was not tested for reliability and validity to ensure that the assessment would measure what it was supposed to measure and if it would produce similar results if the test was used with a different population (Rossi et al., 2004). It was also noted that the learners came up with the answers collectively and that the GATE personnel wanted to see how children responded and communicated with their team and not necessarily whether

they got the correct answer. In no definitions of giftedness are elements like leadership and a willingness to provide alternative suggestions characteristics of a gifted learner. Thus the assessment is questionable. The scores of the cognitive assessment were not used by the GATE personnel to select the learners to progress to the next phase but rather the observations of the facilitators were the selection tool. The GATE personnel used the discussion with the facilitators after the assessment to make a decision about who would progress to the next phase of selection. The literature is clear that criteria should be set prior to the administration of an assessment to ensure that all facilitators rate the learners using the same criteria (Plucker & Callahan, 2014). This eliminates subjectivity. As the GATE personnel did not use the recommended selection process by Mogorosi (2014) the evaluator questions whether the most appropriate learners had been selected for the GATE programme in 2014 (Plucker & Callahan, 2014).

If the aim of an assessment is to measure a gifted learner's IQ and cognitive ability, GATE's activity was not appropriate. Not only is the self-developed activity untested and the actual answers not considered, but rather subjective reports from observers, with no standardised checklists, are the main source of information with which a decision is made. GATE personnel need to be clear on whether they want to assess a learner's interaction given a particular task, or whether an actual IQ assessment is needed. If the latter is what is intended, then it is suggested that a robust, reliable, valid and well-established measure should be used in 2015.

In phase three and four the GATE personnel used a different approach to the approach suggested by Mogorosi (2014). Mogorosi (2014) suggested that GATE personnel complete a dynamic interactive assessment; the GATE personnel implemented a project type activity. Through the interactive assessment Mogorosi suggested the GATE programme would have been able to assess a learner's ability to understand a complex problem and provide creative solutions to the problem. In the task that the GATE personnel implemented the activity was ascertaining whether the learner could work independently by researching about one of the sites they had visited and what the learner found interesting about the sites. The actual phases in the assessment do provide learners with the opportunity to express their opinion and show their creative intellectual thought through the group work projects. The one

disadvantage of the worksheet and project phases is no formal criteria were established to mark the submissions. Thus the phase is subjective in nature.

From what has been documented it can be concluded that GATE personnel identified top achievers at the various schools using exam results, assessed whether these individuals took up leadership roles, and offered different opinions in a group task; and whether they were able to work independently to produce a project. Without these methods being tested, and without objective marking criteria in each phase, it is difficult to argue whether GATE was or was not able to correctly identify those learners who are gifted (according to their giftedness definition developed in 2013). It is therefore recommended that the GATE personnel implement a reliable and valid measure of intelligence testing as the first line of screening and in addition relook at what Mogorosi (2014) proposed as effective methods for screening previously disadvantaged students for giftedness programmes. The evaluator recommends that GATE personnel should work closely with subject matter experts to improve upon their selection process and ensure that correct learners are identified through the appropriate screening mechanisms.

The evaluator also recommends that GATE personnel should hold an exit session with the learners who are not selected for the GATE programme to ensure that their self-esteem is not affected by not being selected for the programme. These learners should be advised about other programmes they can access that have a similar purpose.

**GATE programme activities.** Evaluation question three and evaluation question four aimed to determine what programme activities were implemented by the GATE personnel in 2014, and whether these were the intended programme activities. In 2014 Mogorosi suggested an after school enrichment model which included a focus on in-depth knowledge of Mathematics and English. She also suggested that the English lessons focus on fluency, vocabulary and use of language as English may not be the first language for learners in the programme. She went on further to state that the GATE personnel should include problem-solving activities that the learners could apply to their other school subjects. Mogorosi also proposed that the programme should include additional support to the learners by including a life skills component, computer classes and access to counselling

services. Lastly, Mogorosi highlighted the importance of having a component in the programme that would help build the learner's confidence and in that way enhance their socio-emotional development.

Through personal communication interviews with the GATE personnel, the evaluator was able to establish what activities were implemented in 2014. The GATE personnel ran 20 programme sessions and four holiday sessions from May 2014 to November 2014 for the nine GATE learners. The first two sessions were conducted on a Saturday utilising the after school model recommended by Mogorosi (2014), however, the GATE personnel chose to change the time for the sessions and moved the programme's presentation time to a Thursday during school hours. This decision was based on requests from the parents of the GATE participants who had difficulty with transportation on the weekend. Principals gave permission for the learners to be taken out of their daily school lessons in order to attend the GATE programme. This meant that learners were absent from lessons at school during the two hours they were at the GATE programme sessions.

Table 2 shows the activities of the GATE programme including the facilitators for each session. The activities were clustered into four categories: English; enrichment activities; biodiversity; and educational games. The activities implemented for 2014 included four lessons dedicated to English language and grammar, five lessons dedicated to biodiversity and the remainder of the sessions were divided between enrichment activities and educational games. The GATE personnel chose to focus on grammar in their English sessions. The independent education consultant indicated that grammar was weak in the learners' individual projects during phase four of the selection process. This decision was, however, not confirmed through a formal baseline assessment to determine which areas of English should be targeted.

The GATE personnel included biodiversity as a topic in the GATE programme. These sessions were presented by a volunteer, a retired businessman from the University of the Third Age, who was a specialist in the area. While these sessions did not form part of the original design of the GATE programme, they could be a useful addition. It is suggested that the GATE personnel identify what the intended outcome of such sessions are, and if these are in line with their objectives

of the programme, these sessions should be formalised into the GATE programme theory diagram.

Lastly, the GATE personnel included the following enrichment activities: philately (the study of postage stamps), music and educational games. The GATE personnel also included visits to two heritage sites in Cape Town, the Helderberg Nature Reserve and Vergelegen Estate during the holiday programme. The GATE personnel did not conduct any lessons in Mathematics and Life skills during the course of the year.

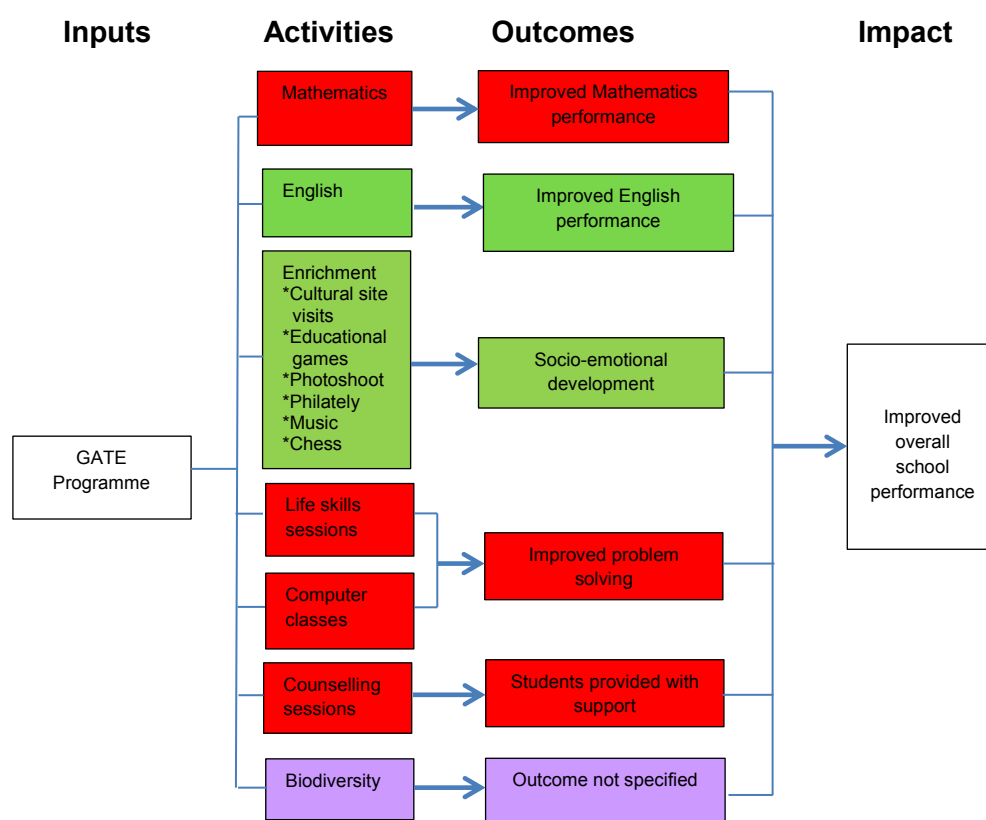
Table 2

*GATE programme activities for 2014*

Subject	Number of sessions	Topics covered	Facilitators
English Grammar	4	Indirect and Direct Speech	Independent Consultant
		Parts of Speech	
		Nouns	
Enrichment activities and Educational Games	9	Chess	Independent Consultant
		Computer Games session	Independent Consultant
		Philately	Retired University Businessman
		Introduction to guitar and cello	Imibala Trust Volunteer
		Board Games	Imibala Trust Volunteer
Biodiversity	5	Helderberg Nature Reserve feedback session	Retired University Businessman
		Kruger Park feedback visit	
		Visit to the Cheetahs	
Holiday Activities	4	Photoshoot	Guest - Photographer
		Helderberg Nature Reserve Visit	Retired University Businessman
		Games	Independent Consultant
End of year activities	2	End of year picnic	Independent Consultant
		Parent Information session	Independent Consultant
<b>Total Number of activities</b>	<b>24</b>		

Figure 2 shows the proposed GATE programme activities from 2013 and the actual programme activities in 2014. The activities in the green are the activities that

were implemented by the GATE personnel, the activities in lilac are the new activities the GATE personnel implemented in 2014 and the activities in red were not implemented in the pilot year of the GATE programme. In the section below the evaluator will discuss and analyse the GATE programme activities.



*Figure 2. Proposed and Actual Programme Activities for the Imibala GATE Enrichment Programme*

It is evident from the Table 1, Figure 2 and the description of the implemented activities that the GATE personnel did not implement all of the programme activities as planned. As discussed above, the GATE personnel viewed Mogorosi's (2014) report as suggested activities. As such they did make changes and included additional activities into the programme. The evaluator acknowledges that these activities were most likely chosen because they served a particular purpose and were more than likely great experiences for the GATE participants.

The biodiversity sessions for example were selected because GATE thought this material would complement what the GATE learners covered at school. Whilst



the literature does not specify that this topic should be included in generic giftedness education it does mention that activities that add to the learner's understanding of a subject which can further develop the gifted learner's ability to perform academically better overall should be included in the giftedness programme (VanTassel-Baska & Brown, 2007). This activity is likely to complement the learner's understanding at school in subjects such as natural and social sciences and thus this addition could be maintained in 2015.

In addition, the visits to the heritage sites were not part of the original intended activities for the programme, but the literature on giftedness education advocates for the inclusion of such activities as it is felt that this type of activity will broaden and further enrich the gifted learner (VanTassel-Baska & Brown, 2007). Thus in both instances the GATE personnel should be commended for including additional topics that are linked to giftedness education. It is, however, recommended that if additional activities implemented during the pilot are envisioned to be part of the GATE programme for 2015 these should be included in the GATE programme theory and that the outcomes of these should be specified.

One shortfall of the pilot GATE programme was the lack of Mathematics, life skills, computer classes and counselling (highlighted in red in Figure 2). As such the intended outcomes linked to each of these activities would not be attainable. This is unfortunate, but the evaluator acknowledges that the pilot was being implemented as an inexpensive project and as such these classes could not be implemented.

In the light of this discussion, in the next section the evaluator will review the programme theory and consider whether the new proposed programme does lead to the intended outcomes.

**Would these activities lead to the intended outcomes?** In the original GATE programme theory the activities were clustered into two components, namely an academic component and a social skills component. If the programme was implemented as the original programme theory stated it is more likely that they would see a change in the participants' overall academic performance and social development. Given that the activities differ from the original programme theory, it is not possible for all of the intended outcomes to be realised and it is possible that other outcomes not depicted in the original programme theory could have resulted.

Because no Mathematics, computer classes, and Life skills activities were implemented the outcome to improve Mathematics and problem solving skills (as reflected in red in Figure 2 above) cannot be accounted for by the GATE programme. The inclusion of English and various enrichment activities, however, make the outcomes of improved English and socio-emotional development more likely for the GATE participants.

It is assumed that the lessons in biodiversity were trying to increase the learners' understanding of their environment and get the learners to think about issues such as climate change and its implications for future generations. As such the GATE participants' capacity to come up with solutions for real world problems is likely to be enhanced. This is seen as a welcomed outcome for the programme and should be formalised in the programme theory. This type of activity is supported by best practice giftedness programmes internationally as described in Chapter one of this dissertation (Neber & Heller, 2002).

By including educational board games such as chess in the GATE programme activities, the GATE personnel were trying to develop the gifted learners' strategic thinking ability (Neber & Heller, 2002). In the chess game the GATE personnel were trying to encourage the gifted learner to think about all possible outcomes for each chess piece moved and in this way enhance their strategic thinking ability. The evaluator summarises from discussion with the GATE personnel that the outcome for this component would be to increase the learners' capacity to develop their opinion about an issue and be able to communicate their opinion to others. The John Hopkins Centre for Talented Youth have used this premise in the giftedness programmes they run and it is listed a component in their programme (Ybarra, 2005).

The GATE personnel indicated that they included the visits to the cultural places of interest as they wanted to get the gifted learner to have the opportunity to visit a place that would pique their interest and stimulate them to think about places outside of their community. The GATE personnel indicated that this activity was linked to the outcome that would lead to the enrichment of the learner's lives and further their overall development.

The last additional GATE programme activity was a studio portrait photograph session. Through this activity the GATE personnel were hoping to increase the learners' perception of their self and increase their confidence in the way they portray themselves. The GATE personnel<sup>3</sup> felt that if they increased the learners' self-esteem, this would lead to the learners' increased confidence in themselves and increased confidence in their ability to communicate with others. In this way the GATE programme activities can contribute to the increase in the gifted learner's overall academic performance and benefit the gifted learner in the future.

In terms of the content for the giftedness programme, the GATE personnel have included elements that have been seen in literature to contribute to enhancing the gifted learners' ability to succeed. All three local schools examples, Sun Valley Primary School, Glenwood High School and Radford Primary School, advocate for the incorporation of the cultural activities, enrichment activities as well as activities that contribute to the learner's overall enhancement (Mogorosi, 2014; Sun Valley Primary School, 2014; Radford House, 2014).

As explained above, however, it is important for the GATE personnel to include these activities into their programme theory, specifying their intended outcomes so that future evaluations can assess whether they have in deed been achieved. In addition it is recommended that the Mathematics component, computer classes and counselling services be investigated as key components of next year's programme.

## **Service Utilisation**

Evaluation question three looked at the target population for the GATE programme by considering who attended the programme; whether these learners were part of the target population; and whether they were recruited at the optimal age. This evaluation question also looked into the attendance and attrition of the learners in the GATE programme, and how many sessions the learners attended. Looking back at Chapter one, the GATE personnel identified that the learners for this programme should be gifted and talented individuals who came from the disadvantaged communities in the Helderberg region in the Western Cape. In her

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<sup>3</sup> I. Roberts and M. De Villiers, personal communication, February 27, 2014.

dissertation in 2014, Mogorosi also suggested that, in addition to the main criteria for the target population, that the learners for the GATE programme should be recruited as early as five years of age, as giftedness instruments have been tested to appropriately predict giftedness potential for this age group but amended the age group as the GATE personnel wanted to recruit learners at 10 years of age. Through personal communication interviews with the GATE personnel the following information was gathered.

Nine learners (n=9) from the five previously disadvantaged schools who agreed to participate in the programme were selected to be part of the GATE programme. Two of the learners were already part of the Imibala Trust Sponsorship programme for which they received school uniforms and books for school. All learners are in grade five this year and are between the ages of 10 – 11 years. There are three learners from Somerset-West Methodist Primary School, two learners from Firgrove Primary School, two learners from Danie Ackermann Primary School, one learner from ACJ Phakade Primary School and one learner from Solomon Qaytana Primary School. There are five learners categorised as Black South African and four learners categorised as Coloured South African. All nine learners who participated in the GATE programme were from the target population that the GATE personnel had originally identified.

Through personal communication interviews with the GATE personnel it was established that all nine learners attended all the programme and holiday sessions of the GATE programme during the year barring one learner. One learner did not attend one session due to a medical procedure but the learner completed the work from the session missed. The GATE programme did not keep an attendance register of the learners in the GATE programme.

It is evident from the above that the GATE personnel recruited and selected the appropriate learners for the programme from the target population that they had decided upon at the beginning of the programme. It is, however important to mention that some of the GATE learners were part of the Imibala sponsorship project and may be a confounding variable in the correct identification of learners from the target population. The GATE personnel made a conscious decision to recruit learners at an older age. The GATE personnel felt that the learners' circumstances and economic

background may have prevented them from performing better in their earlier school years. The GATE personnel indicated that if they were recruited at a higher grade then the gifted learners' marks might be a better indication of their ability. The evaluator recommends that the GATE personnel review the decision to recruit the gifted learners at the end of Grade 4 and consider the recommendation by Silverman (2009) about recruiting gifted learners younger than Grade 4. Silverman's suggestion of recruiting gifted learners as early as five years of age may be difficult to execute as learners may not be part of any formal educational system at this age and any attempt to identify them would be subject to recruiter biases. If the GATE programme was viewed as a three to five year programme then recruiting disadvantaged gifted learners as six years old in Grade 1 might develop their academic abilities earlier in their school career and have the potential to enhance their gifted ability in the long term.

In the interview with the GATE personnel, they indicated that, all the learners recruited attended all the GATE programme sessions and there were no dropouts. The high attendance and no attrition rate are commendable and the GATE personnel should continue to ensure that the learners attend the sessions going forward.

### **Service Delivery**

Evaluation question four looked at who delivered the GATE programme sessions and what their qualifications were. The GATE personnel decided prior to the programme to use retired businessmen and professors from the University of the Third Age to facilitate and deliver some of the lessons for the GATE programme. Through personal communication interviews with the GATE personnel the evaluator gathered the following information about the facilitators who delivered the programme.

The programme was delivered by the independent educational consultant, a retired university businessman, an Imibala Trust volunteer, and a photographer. The holiday programme sessions were delivered by the Iziko Museum staff. The independent educational consultant was the primary facilitator for the programme as well as the English lessons' teacher. She holds a Masters qualification in Education and has worked on a number of education programmes in the United Kingdom and more recently in South Africa. The independent consultant had experience with

delivering lessons to younger learners. The retired businessman was trained to teach university students and had knowledge about a specific subject area, namely, biodiversity. He has limited experience in facilitating sessions with younger learners, however; it was viewed that his body of knowledge would be of great value to the learners. The Imibala Trust volunteer who delivered the chess sessions is experienced in implementing these sessions with children in a number of schools in the Helderberg Basin. The Iziko Museum staff had appropriate experience in teaching young learners as many school groups participate in sessions at the Iziko Museum. The photographer has experience in working with younger learners. Table 3 below shows the facilitators who delivered the GATE programme sessions.

Table 3

*Facilitators who delivered the GATE programme sessions*

Educator	Area	Number of lessons
Retired businessman from the University of the Third Age	Biodiversity	5
Imibala Trust Volunteer	Chess	1
Independent Educational Consultant	English	4
	Educational games and enrichment activities	9
Photographer	Photography	1
Iziko Museum Staff	Heritage studies	4

Evaluation of giftedness programmes advocates that trained educators or school teachers be the facilitators of such programmes as use of these models has shown an increase in a gifted learner's academic performance (Gavin et al., 2009). The GATE personnel have a group of committed volunteers who are experts in their fields of knowledge. They should be acknowledged for their commitment to the programme. It is, however, recommended that the GATE personnel organise a training session for all facilitators and volunteers. It is likely that not all the facilitators and volunteers have been formally trained to work with gifted learners. A training session / programme could ensure that their teaching styles are interactive, and that

their presentations are appropriate in terms of the age and aptitude of the GATE participants.

As an alternative to volunteers who may not always be available, the evaluator suggests that GATE personnel extend their current partnership with the Department of Education to be an intern site for trainee educators. In this way the GATE programme will be helping the Department of Education establish a cohort of educators who are able to deliver giftedness programmes in South Africa. This may help the Department of Education to fulfil their mandate of providing diverse education for special needs learners in South Africa as well as develop a more sustainable partnership for the GATE programme with the department (Oswald & De Villiers, 2013). It is acknowledged that this is not a simple task, given the unwillingness of educators and schools to get involved. GATE is commended for this continued effort to achieve this.

In summarising the process evaluation results, the evaluator noted the following: a) that the GATE personnel did not implement the selection process as recommended by Mogorosi (2014); b) that the GATE personnel did not implement all of the intended activities and amended the programme to include new activities; c) that all the selected participants attended all the programme sessions; and d) that the GATE personnel programme facilitators were the intended facilitators.

In reviewing the selection process the evaluator noted there is literature supporting Mogorosi's (2014) selection process, the same cannot be said for the process that the GATE personnel implemented. The GATE personnel chose to implement a selection process that included the development of their own selection mechanisms. These were not tested for reliability and validity and thus it is questionable as to whether the procedures followed enabled the staff to correctly identify the gifted learners. The evaluator recommends the GATE personnel reconsider using the process as suggested that Mogorosi (2014).

When reviewing the programme activities implemented the evaluator noted that the GATE personnel did not implement all the intended programme activities. In summarising the process evaluation of the GATE programme the evaluator noted that the GATE personnel need to consider: a) revising and amending the GATE programme theory based on the new activities included; b) relooking at introducing

Mathematics, computer classes and counselling as core components of the programme; and c) training the facilitators and volunteers who deliver the programme to enhance their abilities to teach gifted learners.

When reviewing the GATE programme reports the evaluator noted that GATE personnel recruited and selected learners from the intended target population. The evaluator, however, recommends that the GATE personnel use the recruitment process proposed by Mogorosi (201) to ensure that they correctly identify and recruit learners from the correct target population. The evaluator also noted that there was full attendance at all the GATE programme sessions by all the participants. The full attendance may be due in part to the use of the Imibala Trust vehicle and therefore it is critical the GATE personnel renegotiate the use of the vehicle or that it is included in the budget planning for the next rollout of the GATE programme.

When reviewing the facilitators who delivered the programme, the evaluator found that only two facilitators were from the primary group that the GATE personnel identified at the beginning of the programme. The evaluator acknowledges that as it was the first implementation of the GATE programme that the GATE personnel may have struggled to recruit volunteers who could assist with the proposed curriculum in the pilot year (e.g. mathematics teacher). The evaluator does acknowledge that the GATE personnel trained the volunteers in the GATE giftedness model to be able to implement the programme with the learners.

After having reviewed and commented on the infrastructure of the GATE programme, the evaluator will in the next section consider the results of the short-term outcome evaluation. The evaluator will document the perceived changes in the nine learners who participated in the pilot implementation of GATE programme this year.

## **Results for the Outcome Evaluation**

Evaluation question five aimed to determine whether there was a change in the participants' overall school performance by the end of October and if their self-efficacy had improved by October 2014. In this section the evaluator will be using the quantitative and qualitative data collected during the year to present the case studies of each participant who attended the GATE programme. The quantitative data is



based on an 8-item subset of the multidimensional Self-Esteem Questionnaire which measures school self-esteem (See Appendix C) and a self-developed 1-item scale to measure self-efficacy which the evaluator administered prior to the start of the programme in May, mid-programme in July and after the programme in October with all nine participants. The qualitative data is based on the responses from one-on-one interviews with the GATE participants which were conducted in October 2014. Each case study will be divided into three sections: an academic aspect, the social aspect and the recommendations for the GATE programme.

**Participant one.** From Table 4 we can observe an increase in participant one's academic performance in English. The English marks have elevated from term 1's performance to the learner's current performance. The learner confirmed this by saying:

"I get marks at school that are good. My marks are improving."<sup>4</sup>

From Table 4 we can also observe that participant one's mathematics marks have remained consistent across the three terms, this makes sense given that no mathematics sessions were part of the GATE pilot programme. It is important to note that the overall mark for participant one has decreased by the end of term 3.

Table 4

*Participant One's marks in Grade 5*

Subject	Marks for Grade 5 Term 1	Marks for Grade 5 Term 2	Marks for Grade 5 Term 3
	(%)	(%)	(%)
English	72	73	75
Mathematics	62	59	63
Overall average mark for the term	72	68	64

The learner's self-esteem and self-efficacy ratings were high during the pre-test before receiving the GATE programme. From Table 5 it is evident that these attributes have remained constant. This is supported in social science literature which states that these are stable constructs and that high self-esteem does not

<sup>4</sup> Participant 1, personal communication, October 16, 2014

necessarily lead to improved school performance. (Baumeister, Campbell, Krueger, & Vohs, 2003). Baumeister et al. (2003) go on to state that as a result of the improvement in a learner's academic performance there may be an increase in self-esteem. This would be an important component for the GATE personnel to measure as this participant progresses to the next grade.

Table 5

*Participant One's score for the Dubois et al. (1996) School Self-Esteem Measure and the self-efficacy score*

Scale	Pre-test Score	July Score	Post-test Score
Self-esteem rating	3	3.25	3.25
Self-efficacy rating	4	5	4

***What did the participant like about the programme?*** In the interview the participant indicated that her most memorable moment of the GATE programme was visiting heritage sites in Cape Town as she learnt new information about the city and its previous inhabitants. She believes that this will help her understand the material that they will cover about these sites in school. The participant also mentioned that she appreciated the support given to her by the GATE personnel. She mentioned that the GATE personnel created a confidential space during the sessions where the learners could freely ask questions about the topics that they did not understand. The participant indicated that this helped her to understand her school work better and that it will help in the long term to improve her school marks.

***What could be changed/improved?*** The participant was satisfied with the GATE programme, however, she went on to recommend that the GATE programme sessions should not be implemented during school hours. The participant indicated that when the GATE session is run during school hours she is expected to complete the school tasks she missed out on her own and she indicated that this is sometimes difficult for her to complete.

In summary the participant's academic performance in English has increased during the year. The participant's mathematics performance has remained consistent

and the overall mark has decreased over the course of the programme. There is no evidence in both the interview with the participant and the quantitative data to suggest that the GATE programme activities improved the participant's problem solving skills. In summary the GATE programme seems to have helped in the participant's improvement with English, but the causal link cannot be established.

**Participant Two.** From Table 6 we can observe an increase in participant two's academic development. The English, Mathematics and overall marks have all elevated from term 1's performance to the learner's current performance. The learner confirmed this by saying:

"The Imibala Programme has helped me a lot in my school work and it has helped me a lot to be more confident to people. It helped me improve my work."<sup>5</sup>

During the interview with the participant she did not indicate how she felt that the GATE programme sessions had helped her improve her marks. This would be an area that the GATE personnel should understand as this will help them plan the content of the GATE programme sessions better.

Table 6

*Participant Two's marks in Grade 5*

Subject	Marks for Grade 5 Term 1	Marks for Grade 5 Term 2	Marks for Grade 5 Term 3
	(%)	(%)	(%)
English	62	81	89
Mathematics	71	78	85
Overall average mark for the term	72	75	81

What can also be deduced is that the participant's performance improved every term but we cannot confirm that the GATE programme activities accounted for these improvements.

<sup>5</sup> Participant 2, personal communication, October 16, 2014

The learner's self-esteem and self-efficacy ratings were high during the pre-test before receiving the GATE programme. From Table 7 it is evident that these attributes have remained constant.

Table 7

*Participant two's score for the Dubois et al. (1996) School Self-Esteem Measure and the self-efficacy score*

Scale	Pre-test Score	July Score	Post-test Score
Self-esteem rating	3.6	3.4	3.6
Self-efficacy rating	5	5	5

***What did the participant like about the programme?*** In the interview the participant indicated that her most memorable GATE programme activity was a visit to the nature reserve. The participant indicated that she learnt new information about nature, in particular she learnt about what flora grow in this area, which animals inhabit this area and how to care for nature. The participant believed that by learning this information she will be able to participate better in her class at school when this material is covered at class. The participant also indicated that one of the activities the GATE personnel implemented was teaching participants how to take and edit a photograph. The participant indicated that this was a new skill that she learnt and she would be using this skill in her future school projects.

***What could be changed/improved?*** The participant was very satisfied with the programme, however, she went on to recommend that the GATE personnel extend the duration of the GATE programme sessions in order for the participants to spend more time exploring the material that was covered in the session. The participant also indicated that she would not change the materials covered in the programme sessions and would recommend that the GATE personnel implement the same programme activities in the programme next year.

**Participant Three.** From Table 8 we can observe an increase in participant three's academic development. The English, Mathematics and overall marks are all elevated from term 1's performance to the learner's current performance. The learner confirmed this by saying:

“I feel that my marks are getting higher in school. The GATE programme is about helping children to improve things at school.”<sup>6</sup>

Table 8

*Participant Three's marks in Grade 5*

Subject	Marks for Grade 5 Term 1	Marks for Grade 5 Term 2	Marks for Grade 5 Term 3
	(%)	(%)	(%)
English	75	81	94
Mathematics	51	72	71
Overall average mark for the term	65	79	77

The learner's self-esteem and self-efficacy ratings were high during the pre-test before receiving the GATE programme. From Table 9 it is evident that these attributes have remained constant.

Table 9

*Participant Three's score for the Dubois, et al. (1996) School Self-Esteem Measure and the self-efficacy scores*

Scale	Pre-test Score	July Score	Post test Score
Self-esteem rating	3.3	3.25	3.25
Self-efficacy rating	4	4	4

**What did the participant like about the programme?** In the interview the participant indicated that her most memorable experience in the GATE programme sessions was the visit to the heritage site called Vergelegen Estate. The participant learnt about the country's slave history and how this had influenced South African history. By learning about this the participant felt that she would be able to utilise this information in school orals and projects. The participant also indicated that the GATE personnel were very supportive and provided a confidential space for the participant

<sup>6</sup> Participant 3, personal communication, October 16 , 2014

to raise her personal concerns and/or problems that she was facing. The participant summarised her experience on the GATE programme saying:

“The GATE programme makes children comfortable and open-up about things. And we also have a piggy session and that’s when we talk about things. The GATE programme is everything to me.”<sup>7</sup>

***What could be changed/improved?*** The participant was very satisfied with the programme, however, she went on to recommend that additional visits to other places of interest be included in the GATE programme for next year. The participant felt that by including these places participants would be able to learn about topics and be able to use this information in school orals and projects. The participant also recommended that the confidential space provided by the GATE personnel be a critical component of the programme and should be included in the GATE programme next year as it helps participants feel that they can raise any personal or academic issue they need assistance with during the GATE programme sessions.

The results have shown an improvement in the participant’s academic performance and as such it may be attributed to her participation in the GATE programme, but unfortunately without pre and post-test data as well as a control group this cannot be concluded.

**Participant Four.** From Table 10 we can observe an increase in participant four’s academic development. The English, Mathematics and overall marks have all increased from term 1’s performance to the learner’s current performance, despite a dip in all of the marks during term 2. The participant explained:

“In my English it (GATE) helps a lot during exams mostly.”<sup>8</sup>

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<sup>7</sup> Participant 3, personal communication, October 16 , 2014

<sup>8</sup> Participant 4, personal communication, October 16, 2014

Table 10

*Participant Four's marks in Grade 5*

Subject	Marks for Grade 5 Term 1	Marks for Grade 5 Term 2	Marks for Grade 5 Term 3
	(%)	(%)	(%)
English	84	78	87
Mathematics	80	69	92
Overall average mark for the term	77	72	85

The learner's self-esteem and self-efficacy ratings were high during the pre-test before receiving the GATE programme. From Table 11 it is evident that the participant's self-esteem has remained constant. It is also evident, however, that the participant's self-efficacy has decreased during the course of the programme. In social science literature there is evidence to suggest that if a learner's academic performance declines there may be a decrease in perceived self-efficacy by the learner (Koura & Al-Hebaishi, 2014). The marks in term 2 did decrease but without term 4 results it is difficult to comment on whether the regaining of academic performance was sustained till the end of the year. This is not the case for this participant as the academic marks have continued to increase despite a decrease in self-efficacy. The decrease in self-efficacy may be due to a factor outside of the GATE programme and the participant's school and was not established by the evaluator in this study. This is something that the GATE personnel should monitor and if there is a further decrease in the self-efficacy, the GATE personnel should discuss with the participant's guardians.

Table 11

*Participant Four's score for the Dubois et al. (1996) School Self-Esteem Measure and the self-efficacy score*

Scale	Pre-test Score	July Score	Post test Score
Self-esteem rating	3.5	3.3	3
Self-efficacy rating	5	4	3

***What did the participant like about the programme?*** In the interview the participant indicated that her most memorable moment of the programme was the visit to the heritage sites in Cape Town. The participant indicated that she learned new facts about South African heritage which she could use in future school projects. The participant also indicated that by attending the programme she had reaffirmed her ambition to become a chemical engineer and on qualifying she would be able to provide for her family financially as they currently have limited funds available for basic necessities in their home. She liked that the GATE programme activities had encouraged her to work harder at school to achieve her goals. In the interview the participant also mentioned that she liked the lessons in English as she felt that this was helping her to improve her marks in this area. The participant also went on to indicate that she did not like the lesson delivered by the retired businessman. She advised that this session was long and that the businessman did not make the session interactive for the learners. The businessman only provided the participants with new information but did not get the learners to complete tasks about the subject material covered.

***What can be change/improved?*** The participant was satisfied with the programme, however, went on to make two recommendations. The participant indicated that the GATE personnel should inform and prepare the facilitators about the style of learning that should be implemented in the GATE programme sessions. The participant felt that the one facilitator did not make the lesson interactive and as a result the learners did not participate in this lesson. The participant felt that if the facilitators use interactive teaching methods that this will keep the participants engaged in the programme and want to contribute to the lesson. The participant also recommended that the GATE personnel include formal assessments to the GATE programme activities. By doing this the GATE personnel will be able to assess the participant's understanding of the material covered and the facilitators will be able to give the participants constructive feedback that can assist their further learning.

In summary it is unclear given the difference between term 1, 2 and 3 that the GATE programme did work for the learner in improving her academic performance. The causal link between the improvement in performance and the GATE programme activities could not be established during this evaluation. The learner's high self-efficacy decreased during the course of the programme. It is uncertain what may



have caused this decrease in self-efficacy. The evaluator did not explore this and the GATE personnel should follow up with the participant to understand the change in self-efficacy. The self-efficacy measure was implemented at the last session with the learners and as such there was not sufficient time to explore the decrease in the self-efficacy with the participant. This would be important for the GATE personnel as they may see other learners who show the same ratings as participant four.

**Participant Five.** From Table 12 we can observe an increase in participant five's Mathematics and overall mark. The Mathematics and overall marks have elevated from term 1's performance to the learner's current performance. From Table 12 it is, however, evident that participant five's English mark has decreased from term 1 to the current performance. Whilst this is clear in the school reports, the participant still believes the GATE programme activities assisted them in English:

"It (GATE) helped me a lot. Through the English lessons during the GATE programme my writing ability has improved. It helped me pass my work and my work has improved."<sup>9</sup>

Table 12

*Participant Five's marks in Grade 5*

Subject	Marks for Grade 5 Term 1	Marks for Grade 5 Term 2	Marks for Grade 5 Term 3
	(%)	(%)	(%)
English	82	77	76
Mathematics	71	74	92
Overall average mark for the term	68	68	80

Whilst the mathematics and the overall average marks have increased, this cannot be linked to the programme sessions in the GATE programme as no lessons were conducted in Mathematics and other school subjects. The decrease in the English marks may suggest that lessons in English in the GATE programme did not assist the participant in improving her English skills.

<sup>9</sup> Participant 5, personal communication, October 16, 2014.

The learner's self-esteem and self-efficacy ratings were high during the pre-test before receiving the GATE programme. From Table 13 it is evident that the participant's self-esteem is generally constant. The participant's self-efficacy has increased slightly in the post- test score.

Table 13

*Participant Five's score for the Dubois et al. (1996) School Self-Esteem Measure and the self-efficacy score*

Scale	Pre-test Score	July Score	Post test Score
Self-esteem rating	3	3.1	3.1
Self-efficacy rating	4	3	5

***What did the participant like about the programme?*** In the interview the participant indicated that the most memorable activity during the GATE programme was the visit to Cape Town central as she had not visited this place before. During this visit she learnt a lot about the people who first inhabited this area and how the removal of individuals during apartheid had affected the first inhabitants of the city. The participant felt that this information would be very useful when she was completing school activity projects in the future. The participant also indicated that she learnt how to improve her English writing skills through English Grammar lessons that were conducted by the GATE personnel, however this cannot be confirmed by her marks in English as seen in Table 12.

***What could be changed/improved?*** The participant was very satisfied with the GATE programme, however, she went on to recommend that the GATE personnel remove the icebreaker exercise as the beginning of each lesson. The participant indicated that she was an introvert and that this activity made her feel uncomfortable. The GATE personnel were trying to build confidence in the learners through this activity but the GATE personnel had not succeeded in developing this participant's confidence.

The results have shown an improvement in the learner's academic performance during the pilot implementation of the GATE programme, however this

cannot be accounted for by the GATE programme as the areas that the learner improved were not covered by the GATE programme sessions.

**Participant Six.** From Table 14 we can observe an increase in this participant's academic development from term 1 to term 2. The marks for English, Mathematics and overall marks did elevate from term 1's performance to the participant's term 2 performance. This was confirmed by the participant saying:

"I learnt a lot. I feel that my Mathematics mark has improved by term 2."<sup>10</sup>

It is evident, however, that performance of the participant had decreased in all subjects for term 3.<sup>11</sup>

Table 14

*Participant Six's marks in Grade 5*

Subject	Marks for Grade 5 Term 1	Marks for Grade 5 Term 2	Marks for Grade 5 Term 3
	(%)	(%)	(%)
English	73	84	67
Mathematics	74	93	66
Overall average mark for the term	62	75	70

What can be deduced is that the performance in term 1 and term 2 is similar and that the performance in term 3 is very different to the previous terms' performances. When observing the marks in term 3, the evaluator noted that they are substantially different and that the GATE personnel should investigate with the educator at the participant's school and the participant's guardian if the changes in the marks can be explained. The evaluator did not investigate this point in the current evaluation as there was not sufficient time.

<sup>10</sup> Participant 6, personal communication, October 16, 2014

<sup>11</sup> Participant 6's educator advised the evaluator that the participant had experienced a personal issue during term three and this may have impacted on the results for term three.

Table 15

*Participant Six's score for the Dubois et al. (1996) School Self-Esteem Measure and the self-efficacy score*

Scale	Pre-test Score	July Score	Post-test Score
Self-esteem rating	3.3	3.6	3.6
Self-efficacy rating	3	5	5

The learner's self-esteem and self-efficacy ratings were high during the pre-test before receiving the GATE programme. From Table 15 it is evident that the participant's self-esteem score has remained constant but the participant's self-efficacy has increased slightly as is evident by the post test score.

***What did the participant like about the programme?*** In the interview the participant indicated that she learnt about Islam through the visit to the mosque. The participant indicated that this was the first time she had visited a place of worship different to her own and appreciated the opportunity to learn about a different culture. The participant indicated that this learning will help her to be open to learning about new cultures. In the following quote the participant expressed her learnings from the visit to the mosque saying:

"Going to the Bo-Kaap and learning about their culture. The Imam spoke over a microphone and prayed. There is a curtain between the top and bottom. Woman stay at home on the marriage day while the husband goes to the mosque. That the first prayer is 5am and the last one is 9pm. It's a culture I never knew".<sup>12</sup>

The participant also indicated that the most memorable thing about the GATE programme activities was the visit to the slave lodge. The participant indicated that she learnt about slavery and how it has influenced history in South Africa. The participant indicated that she did not enjoy the visit to the Helderberg Nature Reserve as she was not used to walking long distances as was required by the walking at the reserve.

<sup>12</sup> Participant 6, personal communication, October 16, 2014

***What could be changed/improved?*** The participant was satisfied with the programme, however, she went on to recommend that computer sessions be added to the GATE programme activities.

Based on the decrease in marks in term 3, it is unclear whether this learner has improved in their performance or not this year. Without term 4's marks we cannot speculate further.

**Participant Seven.** From Table 16 we can observe an increase in participant seven's Mathematics and overall marks. The marks have all increased from term 1's performance to the learner's current performance. The participant confirmed that her mark has increased by saying that:

"The GATE programme helps us to work together and helps us in our school work and general knowledge. I received full marks for my Grade five term two test."<sup>13</sup>

Whilst the participant indicated that she received full marks for her term two assessment, the mark indicated below does not reflect the comment made by the participant. The participant's English marks have actually decreased from term 1.

Table 16

*Participant Seven's marks in Grade 5*

Subject	Marks for Grade 5 Term 1	Marks for Grade 5 Term 2	Marks for Grade 5 Term 3
	(%)	(%)	(%)
English	90	82	84
Mathematics	73	88	100
Overall average mark for the term	84	82	88

The learner's self-esteem and self-efficacy ratings were high during the pre-test before receiving the GATE programme. From Table 17 it is evident that these attributes have remained constant.

<sup>13</sup> Participant 7, personal communication, October 16, 2014.

Table 17

*Participant Seven's score for the Dubois et al. (1996) School Self-Esteem Measure and the self-efficacy score*

Scale	Pre-test Score	July Score	Post-test Score
Self-esteem rating	3.6	3.5	3.3
Self-efficacy rating	5	5	5

***What did the participant like about the programme?*** In the interview the participant indicated that her most memorable GATE programme activity was the visits to the Castle of Good Hope and the historical places in Cape Town. She indicated that she had learnt new historical facts about these places and could use this information in her projects at school. The participant also indicated that she had learnt subject material ahead of her school classmates, including the political history of South Africa, and when the material was taught later in the year at school she would better be able to understand the material being covered. The participant believed that through this it helped her to improve her marks in history in school. There is no evidence from the school report to indicate that there was an increase in performance in this subject.

***What could be changed/improved?*** The participant was satisfied with the programme, however, did go on to recommend that the retired businessman make the sessions he delivered more interactive for the learners. The businessman only provided the participants with new information but did not get the learners to complete tasks about the subject material covered. The participant indicated that the GATE personnel review this issue and make changes before the implementation of the GATE programme sessions in the new year.

This participants performance results are inconclusive and we cannot speculate whether the programme did or did not work for her.

**Participant Eight.** From Table 18 we can observe an increase in participant eight's academic development. The English, Mathematics and overall marks are all

elevated from term 1's performance to the learner's current performance. The learner confirmed this by saying:

"The programme has helped me with my marks at school."<sup>14</sup>

Table 18

*Participant Eight's marks in Grade 5*

Subject	Marks for Grade 5 Term 1	Marks for Grade 5 Term 2	Marks for Grade 5 Term 3
	(%)	(%)	(%)
English	81	70	81
Mathematics	63	80	90
Overall average mark for the term	73	73	84

What can be deduced is that the performance in Mathematics has increased drastically and yet there were no sessions in Mathematics in the GATE programme sessions. This may be that there were other factors outside of the GATE programme, perhaps in the school environment that, may have influenced the participant's performance in the mathematics. The evaluator was not able to explore this further given the submission deadlines of the dissertation. The evaluator suggests that this might be an area that the GATE personnel would want to investigate further, and once it has been established what that influence was, that the GATE personnel consider whether it can be included in the GATE programme sessions.

The learner's self-esteem rating was high during the pre-test before receiving the GATE programme. From Table 19 it is evident that this attribute has remained constant. The participant's self-efficacy rating fluctuated during the programme but was a high rating at the end of the programme.<sup>15</sup> This would be an important component for the GATE personnel to measure as this participant progresses to the next grade.

<sup>14</sup> Participant 8, personal Communication, October 16, 2014

<sup>15</sup> The GATE personnel indicated to the evaluator that this participant had experienced a personal issue at home during the middle of the programme.

Table 19

*Participant Eight's score for the Dubois et al. (1996) School Self-Esteem Measure and the self-efficacy score*

Scale	Pre-test Score	July Score	Post-test Score
Self-esteem rating	3.5	3.3	3.5
Self-efficacy rating	5	2	5

***What did the participant like about the programme?*** In the interview the participant indicated that her most memorable moment was the visits to Vergelegen Estate, the Bo-Kaap and the library. She particularly enjoyed the visit to the library as she was able to look through the many books available and learned how to access the library which she could use in her future visits to the library. The participant also indicated her appreciation of the additional support she received from the GATE personnel as this helped her to improve her study skills which she used in her school examinations. The participant's results are evidence of this support.

***What could be changed/improved?*** The participant was satisfied with the GATE programme, however, she recommended that the GATE programme consider including other school subjects. This is confirmed by the participant when she says:

"I feel the programme is good, but they must not teach us only one subject. I would like it if they teach us another subject like natural science, more about history not only about the slaves."<sup>16</sup>

The results have shown an improvement in the learner's academic performance during the pilot implementation of the GATE programme. The improvement in the participant's academic performance is confirmed by the academic marks and the participant's opinion of the programme, but we cannot conclude that the GATE programme is responsible for these effects.

**Participant Nine.** From Table 20 we can observe an increase in participant nine's academic development. The English, Mathematics and overall marks are all

<sup>16</sup> Participant 8, personal Communication, October 16, 2014



elevated from term 1's performance to the learner's current performance. The learner confirmed this by saying:

"It has been exciting and I have learnt a lot. My English is getting better. It has gone from a code 6(good) to code 7(outstanding)."<sup>17</sup>

This is confirmed by the participant's academic marks in term 3 in the table below.

Table 20

*Participant Nine's marks in Grade 5*

Subject	Marks for Grade 5 Term 1	Marks for Grade 5 Term 2	Marks for Grade 5 Term 3
	(%)	(%)	(%)
English	89	89	91
Mathematics	67	70	76
Overall average mark for the term	78	73	83

What can also be deduced is that the performance in term 2 and term 3 is very similar for English and Mathematics, tending to indicate that the learner maintained the marks achieved by term 2. The increase in marks in the two subjects has resulted in an increase in the overall mark that the participant achieved in term 3.

The learner's self-esteem and self-efficacy ratings were high during the pre-test before they received the GATE programme. From Table 21 it is evident that these attributes have remained constant.

Table 21

*Participant Nine's score for the Dubois et al. (1996) School Self-Esteem Measure and the self-efficacy score*

Scale	Pre-test Score	July Score	Post-test Score
Self-esteem rating	3.2	3.3	3.3
Self-efficacy rating	5	4	5

<sup>17</sup> Participant 9, personal communication, October 16, 2014

***What did the participant like about the programme?*** In the interview the participant indicated the most memorable moment of the GATE programme was the visits to the heritage sites in Cape Town. The participant indicated that they learnt new information about the heritage sites visited and that they would be able to utilise this information in their future studies at school. The participant confirmed this by saying:

“Going to places like the Iziko Museum is very exciting and an experience of a lifetime. I would have never gone to these places without Imibala.”

The participant believed that by the group learning and understanding this new information they would have an advantage over their classmates when they cover the topics at school. The participant also advised that the GATE personnel provided the opportunity to make new friends, learn about young people from different cultures and that this skill would help learners to understand different individuals as they progress through their school careers. The participant indicated a level of discomfort when initially visiting the mosque because it was an unknown place of worship. In the end, however, the participant found the visit interesting and learnt about the Muslim religion.

***What could be changed/improved?*** The participant was very satisfied with the programme, however, it was recommended that the GATE personnel include lessons in Mathematics as it is believed that this content would help learners to improve their overall average at the end of the year.

The results have shown an improvement in the learner's academic performance during the pilot implementation of the GATE programme. The improvement in the participant's academic performance is confirmed by the academic marks and the participant's opinion of the programme. In summary the GATE programme may have assisted with these improvements, but this cannot be confirmed.

The implications of the results obtained from this short-term outcome evaluation will be discussed in the following section of this chapter.

## **Outcome Evaluation and Recommendations**

The school reports obtained showed that seven out of the nine GATE participants' marks in English improved; eight of the nine participants' marks in Mathematics improved; and the overall average of these participants also improved by term three. All the participants' self-esteem levels were high at the beginning of the programme and remained high throughout the programme. In the section that follows the evaluator will provide a brief discussion of the findings in relation to this evaluation.

The increase in the participants' English marks may be attributed to the attendance of the four English sessions that formed part of the GATE programme, however, this is only speculation. Without pre- and post-test data the evaluator is unable to conclude a causal relationship between these sessions and the improvements in English marks. Literature in this area indicates that by continually exposing a gifted learner to specific subject material, the gifted learner's performance will increase and exceed the performance of their age counterparts (Subotnik et al., 2011). If the GATE personnel would like to develop the gifted learners' English skills and ensure that the learners reach their potential, the GATE personnel need to review the number of sessions delivered in English for the rollout in 2015.

When reviewing the increase in the participants' marks in Mathematics it is evident that all the participants' marks improved, yet no lessons were delivered in Mathematics during the GATE programme sessions. The increase in marks cannot be accounted for by the GATE programme, but do coincide with the students' participations in the GATE programme. The increase in the participants' marks maybe due to another factor outside of the programme, e.g. in their school itself or their own learning capacity. Alternatively one may argue that the increased attention given to the participants by the GATE personnel has increased their motivation to learn and as such they are performing better academically. Without a control group, these results are again inconclusive. Increasing maths performance was an initial intended outcome of the GATE programme, yet no sessions focussed on this. If this is still an intended outcome in 2015, it is recommended that GATE implement programme activities aligned to this outcome.

The participants all indicated that the most memorable activities of the GATE programme were the visits to the heritage sites. They learnt new information about South Africa and could utilise this information in their school projects. The participants very rarely mentioned or commented on the academic sessions in the GATE programme. This is problematic as the GATE programme theory as proposed by Mogorosi (2014) is predominantly centred on school subjects and influencing learner's academically. That is not to say that socio-emotional development is not an important outcome, it is, and needs to be measured, however, the focus of the programme is academic enhancement. The GATE personnel need to consider which focus area they would like to incorporate in the rollout for the GATE programme in 2015.

The GATE programme was initially envisaged as an accelerated approach gifted programme. In order to achieve this approach the sessions provided by GATE personnel should build on the content that the participants are covering in the school classes. From the sessions delivered it is unclear as to whether the programme was in fact an accelerated approach or just an extra-curricular programme. Given that school content areas like Mathematics were not included. The evaluator recommends that the GATE personnel ensure that the school curriculum for Grade 5 is at the forefront of the programme and that complementary content to the school curriculum is included in future GATE programme activities. The recommendation is based upon the understanding that if the GATE programme is to have an influence on the learner's overall mark then elements of the school curriculum must be included in the GATE programme activities.

The evaluator also noted through the interviews with the participants that the GATE personnel's decision to run the GATE programme sessions during school hours may have had adverse effects for the participants in the programme. Two out of nine participants indicated that they did not like that the GATE programme sessions run during schools hours, as they had to find time to complete their outstanding school tasks in their own time without the assistance of an educator. As such this is an important area to consider for 2015. If the GATE programme was an accelerated model, the during-school time classes would not pose too much of a problem. It should be noted, however, that taking participants out of their classes could hinder their school performance. The literature on enrichment models indicates

that learners receive tuition outside of their normal school hours, complementing the learning received at school and providing opportunities for further in-depth study of a new topic (Neber & Heller, 2002; Stanley, 1976). While the evaluator acknowledges the reasons for changing the programme to a during-school programme, perhaps strategies could be discussed on how the programme could be delivered outside of school times without having transportation issues for the students and parents.

When reviewing the programme activities the GATE personnel also indicated in personal interviews<sup>18</sup> at the beginning of the programme that they would like to develop the gifted learner's self-confidence. The evaluator used the self-esteem scale to measure if the learner's self-esteem improved during the course of the GATE programme sessions. The evaluator noted that all learners' self-esteem was high at the beginning of the programme and remained constant during the programme. This indicates that the GATE personnel, through the programme activities, may not have had an influence on the participants' already high self-esteem. In addition, six out of the nine participants' self-efficacy remained high throughout the GATE programme with changes in only three participant's self-efficacy scores. Two participants' self-efficacy score increased by the end of the GATE programme and one participant's score decreased. The evaluator suggests that the GATE personnel investigate this with the participants' educators and guardians to establish what might have brought about the changes in the scores for the participants. Unfortunately the evaluator was not able to perform this investigation for GATE. It is suggested that this characteristic continue to be monitored in 2015 because of the known relationship that exists between self-efficacy and performance (Subotnik et al., 2011; Plucker & Callahan, 2014).

The evaluator did note that some of the GATE learners were also receiving assistance through the Imibala Trust sponsorship project. As such this programme could be what resulted in the participants' high self-esteem. Literature in the field of giftedness education advocates for the inclusion of self-esteem and self-efficacy components into models that implementers develop (VanTassel-Baska et al., 2007). The literature shows that if implementers of giftedness programmes include activities on self-esteem in their programmes that there is an increase in the learners'

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<sup>18</sup> I. Roberts and M. De Villiers, personal communication, October 23, 2014.

academic performance (VanTassel-Baska et al., 2007). The evaluator suggests that the GATE personnel use the Dubois et al. (1996) School Self-Esteem Measure and the self-efficacy scale used in this evaluation to develop a self-esteem profile for each of the participants. This measure can be used as a pre and post-test measure in further evaluations of the GATE programme as it is a valid and reliable scale.

Critical to the sustainability of the GATE programme is the achievement of short and medium term outcomes. In this evaluation the evaluator was only able to conduct a very limited scope of work due to a number of reasons: a) no pre-tests were conducted in the subject content areas; and b) no control group could be established due to an inability to match the GATE participants. Due to these reasons, the evaluator was unable to ascertain if the current programme activities did account for the changes in the participants' academic performances. The evaluator made an initial assessment, based on the academic results of the participants that the participants' performance increased but the causal link could unfortunately not be established through this evaluation.

It is important to note that GATE personnel understood the need to have a control group; however, upon starting this evaluation a control group was not possible. The GATE personnel had already selected their top nine participants for the programme. As such any participant placed in the control group would not have been comparable to those participants in the GATE programme. In order to assess differences, both the control group and experimental group (GATE participants) must have the same qualities and characteristics. Thus, having already pre-selected the participants, there would be a giftedness difference between the group who received the intervention and those who did not, which would have provided biased results for the programme.

If the GATE personnel would like to see if the GATE programme has achieved its outcomes the evaluator strongly recommends that the GATE personnel should work with an evaluator in 2015. The evaluator could help them to implement a randomised controlled trial (which counters the reason for why a control group was not possible for this research) as well as continuously monitor the further implementation of the GATE programme according to the original guidelines and strong educational principles.

For the randomised control trial the GATE personnel should select a new cohort of gifted learners in 2015 using the selection and recruitment process recommended by Mogorosi (2014). It is assumed that by giving each Grade four learner from the participating schools an IQ test, GATE personnel could identify those students who achieve above 120. They should aim to select the top 20 IQ test scores. These 20 learners should then be **randomly assigned** into two groups, one group will receive the intervention (the GATE programme) and one group will form the control group (no programme). In other words, GATE does not identify the top participants (from the 20 shortlisted participants) and enter them into the programme. Instead all of those participants who are deemed eligible are randomly assigned to either the GATE programme or the control group. This design would be considered a quasi-experimental design. Through this selection process a comparable control group should be achieved. The evaluator would need to administer a pre and post-test to measure the participants' Mathematics and English abilities in both groups as well as the Dubois et al. (1996) School Self-Esteem Measure and the self-efficacy scale to measure the participants' self-esteem and self-efficacy. The evaluator could also design a standardised report sheet for school teachers in order for them to document the progress of the experimental group and control group learners in the classroom. The educators of the gifted learners could complete the report sheet at three points during the programme and can then be analysed and form part of the findings for the study. In this way the evaluator can compare the results of the two groups and ascertain if the GATE programme activities accounted for any significant differences observed in the experimental group. This would enable GATE to establish the causal link between the programme activities and the intended outcomes (mainly academic performance). Should the programme be successful, for ethical reasons it is suggested that the control group receive the intervention in 2016.

In summary, whilst the gifted learners' academic performance has improved this evaluation could not establish whether or not it was attendance at the GATE programme that influenced this change.

## **Limitations**

Due to the small sample size of the GATE programme, and the unavailability of a comparison group, the evaluator was not able to establish a control group to

objectively compare the outcomes for both groups and show that it was the programme that resulted in the outcomes. In the absence of a control group, the evaluator developed case studies through interviews with each of the participants and this was not ideal. The evaluator was thus not able to establish a causal link between the programme activities and the programme outcomes and as a result could not indicate that GATE programme has achieved its objectives. The evaluation was, however, able to document how the pilot programme was implemented. Areas aligned to the plan were reported, and the implications of those areas which were not implemented as intended were discussed. The short-term outcomes variables of each participant were documented as well as qualitative responses from the learners.

### **Final Recommendations and Conclusion**

This evaluation has shown that the gifted learners who attended the GATE giftedness and talented pilot programme have improved in their academic performance. The evaluator suspects that the changes in the learners' English performance may be linked to the programme. The improvement of the learners' Mathematics and overall average could not be accounted for by the GATE programme activities as the GATE personnel did not include lessons in Mathematics or any other school subjects. What the evaluation did show was that the programme's design conformed to literature by using academic and cultural components and that this should be continued for the 2015 programme.

Other recommendations made to the GATE personnel are: a) to implement the selection process as designed by Mogorosi (2014) in 2015, b) to review the school curriculum for Grade 5 and include complementary content to the school curriculum in the GATE programme activities, and c) to conduct a randomised control trial to investigate the causal link between the GATE programme activities and its intended outcomes. In so doing the GATE personnel can show empirical evidence that the GATE programme is guided by best practice models in curriculum design and contribute to evaluation research on giftedness programmes in South Africa.

GATE personnel should be commended because these kinds of interventions are needed in the country in order to address the educational needs of those



previously disadvantaged students. Their programme's goal of producing top achieving students is closely aligned with tertiary education's strategy to increase the number of black graduates. Programmes to assist with this cannot start after high school, there needs to be early intervention. GATE has acknowledged this, and is attempting to respond to this need. This evaluation report should help GATE to ascertain what needs to be done in 2015 in order to improve upon this year's pilot, and in so doing come closer to obtaining its objective.

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## **Appendix A**

### **GATE programme staff interview questions**

1. In the July report you have described the selection process. Could you clarify the steps taken? (Please could you elaborate on the steps listed)
2. In the second part of the selection process the learners completed a cognitive assessment. Did the scholars need to achieve a certain score? What was the test about? What was its structure and aim? Could I have a copy of the cognitive assessment?
3. In phase three how many learners participated in the museum visits? What did they do at the museum visits? Was there a formal assessment? Are you able to provide me with a copy of the assessment?
4. In phase four there is an oral or written test. Are you able to provide me with a copy of the two blank tests? How did you assess the projects that each learner had to complete? How were the learners chosen at the end of this phase?
5. What activities were implemented as part of the pilot programme this year?
6. What activities were not included in the rollout? Were there any additions to the programme and why?
7. In the July report you mention that the learners' English abilities were assessed. How did you ascertain that their English skills were weak?
8. Did you also assess the learners' maths ability?
9. How many English lessons were completed throughout the GATE programme?
10. Did all the learners complete the programme? Did any learners drop out of the programme? What were their reasons for dropping out of the programme?
11. How many programme activities did each learner attend? Do you have a record (registers that could assist with this; are you able to provide me with a record of attendance for the learners in the programme)?
12. Who delivered the activities for the gifted learners? Were they the planned instructors of the programme? What are their qualifications?
13. Did you experience any difficulties in rolling out the programme?

14. What was the involvement of the parents in the programme? What was the involvement of the educators from the schools in the programme?
15. Did the GATE programme have sufficient resources to rollout the programme? Could you advise what funding was available for the programme? Was there sufficient programme staff to deliver the programme? Was there sufficient space to deliver the lessons at Imibala? Was any form of transport used for the learners in the programme and was this sufficient? What other resources did the programme need to deliver the programme?
16. Will the programme be implemented next year?
17. What changes would you make to the programme before implementation in 2015?
18. Would you like to add anything about the programme that we have not covered?

## **Appendix B**

### **Semi-structured interviews with the learners**

1. Can you tell me a little bit about your experience and thoughts of the GATE programme this year?
2. What did you like about the programme?
3. What did you not like about the programme?
4. What is the one thing that you will remember about the GATE programme?
5. Tell me about the support you received during the GATE programme? Would you change anything about GATE?
6. What do you think the programme has done for you?
7. Is there any additional you would like to tell me about the GATE programme?



## Appendix C

### Self-Esteem Questionnaire

DuBois, Felner, Brand, Phillips, & Lease (1996) School Self-Esteem Questionnaire

#### GATE Interview Questions

##### Demographic information

Name \_\_\_\_\_

Age \_\_\_\_\_

School \_\_\_\_\_

Grade \_\_\_\_\_

Race (*Please tick one box*)

Black
-------

Indian
--------

White
-------

Coloured
----------

Other
-------

Prefer not to answer
-------------------------

Number of people in the household \_\_\_\_\_

Number of parents/guardians \_\_\_\_\_

## School Self-Esteem Questionnaire

8 items from DuBois, Felner, Brand, Phillips, & Lease, 1996

---

### INSTRUCTIONS:

Please assist the children to provide their level of agreement with the following statements. Teachers to mark an X over the most appropriate response category.

**1. I am as good a student as I want to be.**

1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree
------------------------	---------------	------------	---------------------

**2. I am doing as well in school work as I want to.**

1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree
------------------------	---------------	------------	---------------------

**3. I am good enough at maths.**

1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree
------------------------	---------------	------------	---------------------

**4. I am as good at reading and writing as I want to be.**

1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree
------------------------	---------------	------------	---------------------

**5. I get marks that are good enough for me.**

1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree
------------------------	---------------	------------	---------------------

**6. I feel good about how good a student I am.**

1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree
------------------------	---------------	------------	---------------------

**7. I do as well on tests in school as I want to.**

1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree
------------------------	---------------	------------	---------------------

**8. I get too many bad marks on my report cards.**

1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree
------------------------	---------------	------------	---------------------

**9. How would you estimate your school performance compared to other students in your class?**

In the low 10%	Below Average	Average	Above Average	In the high 10%
----------------	---------------	---------	---------------	-----------------

## Appendix D

### Parent Consent Form



Dear Parent,

I am a student at the University of Cape Town and I am doing research on the influence of extra lessons for grade 5 students. I would like to ask your child nine questions about their experiences of school.

These questions will cause no harm to your child. The research has been approved by the Commerce Faculty Ethics in Research Committee. Your child can choose to stop taking part in the research at any time.

If you agree that I can gain this information from your child, please sign below.

Name of Parent:

Name of Child:

.....

.....

Signature:

Date:

.....

.....

Should you have any questions regarding the research please feel free to contact Lucina Reddy on 021 650 1004.

#### **PLEASE ALSO COMPLETE THE FOLLOWING INFORMATION:**

Mother's Highest Education Level \_\_\_\_\_

Father's Highest Education Level \_\_\_\_\_

Guardian's Highest Education Level \_\_\_\_\_

## Appendix E

### GATE Cognitive Assessment Tool

Which one of the five is least like the other four?

☐ Dog ☐ Mouse ☐ Lion ☐ Snake ☐ Elephant

Which number should come next in the series?

1 - 1 - 2 - 3 - 5 - 8 - 13

☐ 8 ☐ 13 ☐ 21 ☐ 26 ☐ 31

Which one of the five choices makes the best comparison?  
PEACH is to HCAEP as 46251 is to:

☐ 25641 ☐ 26451 ☐ 12654 ☐ 51462 ☐ 15264

Mary, who is sixteen years old, is four times as old as her brother. How old will Mary be when she is twice as old as her brother?

☐ 20 ☐ 24 ☐ 25 ☐ 26 ☐ 28

Which larger shape would be made if the two sections are fitted together?



**Which one of the numbers does not belong in the following series?  
2 - 3 - 6 - 7 - 8 - 14 - 15 - 30**

☐ THREE ☐ SEVEN ☐ EIGHT ☐ FIFTEEN ☐ THIRTY

**Which one of the five choices makes the best comparison?  
Finger is to Hand as Leaf is to:**

☐ Twig ☐ Tree ☐ Branch ☐ Blossom ☐ Bark

**If you rearrange the letters "CIFAIPC" you would have the name of a(n):**

☐ City ☐ Animal ☐ Ocean ☐ River ☐ Country

**Choose the number that is  $\frac{1}{4}$  of  $\frac{1}{2}$  of  $\frac{1}{5}$  of 200:**

☐ 2 ☐ 5 ☐ 10 ☐ 25 ☐ 50

**John needs 13 bottles of water from the store. John can only carry 3 at a time.  
What's the minimum number of trips John needs to make to the store?**

☐ 3 ☐ 4 ☐ 4  $\frac{1}{2}$  ☐ 5 ☐ 6

**If all Bloops are Razzies and all Razzies are Lazzies, then all Bloops are definitely Lazzies?**

☐ True ☐ False

**Choose the word most similar to "Trustworthy":**

☐ Resolute ☐ Tenacity ☐ Relevant ☐ Insolent ☐ Reliable

**If you rearrange the letters "LNGEDNA" you have the name of a(n):**

☐ Animal ☐ Country ☐ State ☐ City ☐ Ocean

Which one of the numbers does not belong in the following series?

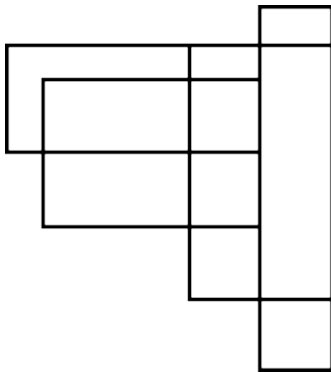
1 - 2 - 5 - 10 - 13 - 26 - 29 - 48

☐ 1 ☐ 5 ☐ 26 ☐ 29 ☐ 48

Ralph likes 25 but not 24; he likes 400 but not 300; he likes 144 but not 145.  
Which does he like:

☐ 10 ☐ 50 ☐ 124 ☐ 200 ☐ 1600

How many four-sided figures appear in the diagram below?



☐ 10 ☐ 16 ☐ 22 ☐ 25 ☐ 28

What is the missing number in the sequence shown below?

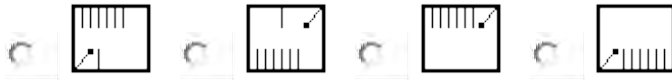
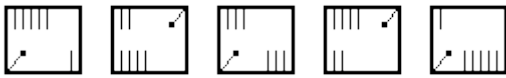
1 - 8 - 27 - ? - 125 - 216

☐ 36 ☐ 45 ☐ 46 ☐ 64 ☐ 99

Which one of the following things is the least like the others?

☐ Poem ☐ Novel ☐ Painting ☐ Statue ☐ Flower

Which of the figures below the line of drawings best completes the series?



Which of the figures below the line of drawings best completes the series?





## Appendix F

### IZIKO MUSEUM WORKSHEET

# SLAVERY AT THE CAPE

Answers can be found on the exhibition panels as well as in the digital timeline



**iziko**  
museums

1 How did slavery come to the Cape? \_\_\_\_\_

\_\_\_\_\_

2 From where did the first slaves at the Cape come? \_\_\_\_\_

\_\_\_\_\_

3 From where did the Dutch East India Company (VOC) get slaves? \_\_\_\_\_

\_\_\_\_\_

4 From which African island did the VOC get 25% of their slaves? \_\_\_\_\_

\_\_\_\_\_

5 Who bought slaves in Madagascar? \_\_\_\_\_

\_\_\_\_\_

6 How many slaving voyages did the VOC organise? \_\_\_\_\_

\_\_\_\_\_

7 Why was Madagascar a good place to buy slaves? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

8 Why did the Dutch use slaves at the Cape? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

9 Where did the slaves work at the Cape? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



Cape Town with Table Mountain



Khoi farmers walking with cows



Cape slave busy ploughing



Cape slaves hoeing under supervision



Slave shackles

10 Why did slave owners re-name slaves? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

11 When did the VOC build the Slave Lodge and why? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

12 Where is the Slave Lodge today and what is it used for? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

13 What kind of shoes did the slaves wear at the Cape? \_\_\_\_\_

\_\_\_\_\_

14 Were slaves allowed to wear hats? \_\_\_\_\_

15 Was marriage between slaves recognised in the 18<sup>th</sup> century? \_\_\_\_\_

\_\_\_\_\_

16 Did slaves resist slavery? \_\_\_\_\_

\_\_\_\_\_

17 When were slaves emancipated at the Cape? \_\_\_\_\_

18 How long was a slave's apprenticeship? \_\_\_\_\_

19 Why do we remember slavery? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

20 Does slavery still exist today? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



Slave Lodge - Government buildings



Slave Lodge - Museum



Slave Lodge early in the 18<sup>th</sup> century



Plan of Slave Lodge - 18<sup>th</sup> century



Freed slave



# Planetarium

25 Queen Victoria Street, Cape Town  
Postal: PO Box 61, CAPE TOWN, 8000  
Tel 021 481-3900, Fax 021 481-3990

The map shows the night sky visible above the Cape at 21:00 hours in the middle of the month. At different times of the evening, or different times of the month, objects above the eastern and western horizon may be slightly higher or lower.

The centre of the map is the overhead point, the edge is the horizon. To use the map, hold it up in front of you and rotate it to match the direction you are looking (e.g. hold it upside down when you are looking south). Do not lay it flat on a table or the points of the compass will be the wrong way round.



## EVENING SKY

To the north the Hunter (Orion) is in combat with the Bull (Taurus). His hunting Dogs (Canis Major and Canis Minor) complete the familiar summer hunting scene. Not as well known is the sailing scene, almost overhead and a little to the south. It is dominated by the Great Ship Argo Navis (from Greek mythology), which consists of three constellations: the Sails (Vela), the Stern (Puppis) and the Keel (Carina). Completing the scene are three fainter constellations, Pyxis (Compass) is above the Sails; Volans (Flying Fish) is below the Keel, while Columba (Dove), flies to the west of

the Stern. Their stars are admittedly harder to detect, but fun to search for on a moonless night. The second brightest star in the night sky, Canopus in Carina, is the only star named after a real person, the pilot of the Greek fleet of King Menelaus. In isiXhosa it is called *uCanzibe*, the harbinger of winter. Autumn equinox is on 20 March, confirming that the seasons are indeed changing. Planet Jupiter is the bright object in Gemini (Twins). Planets Mars and Saturn are in Virgo (Maiden) and Libra (Scales) respectively. The Moon is in the evening sky from 5 March until 20 March.

This map is given to those who attend the shows on Saturday at 13:00, Sunday at 13:00 and Tuesday at 20:00. It is copyright to the Iziko Planetarium.

[www.iziko.org.za](http://www.iziko.org.za)

**iziko**  
museums of  
South Africa



# What happened to Pluto?

Pluto was discovered in 1930 and originally considered to be one of the 9 planets in our Solar System. However, with the help of bigger and better telescopes, objects similar to Pluto have been discovered. Can we call all of them planets? What is a planet?

Astronomers decided that for an object to be called a planet, it

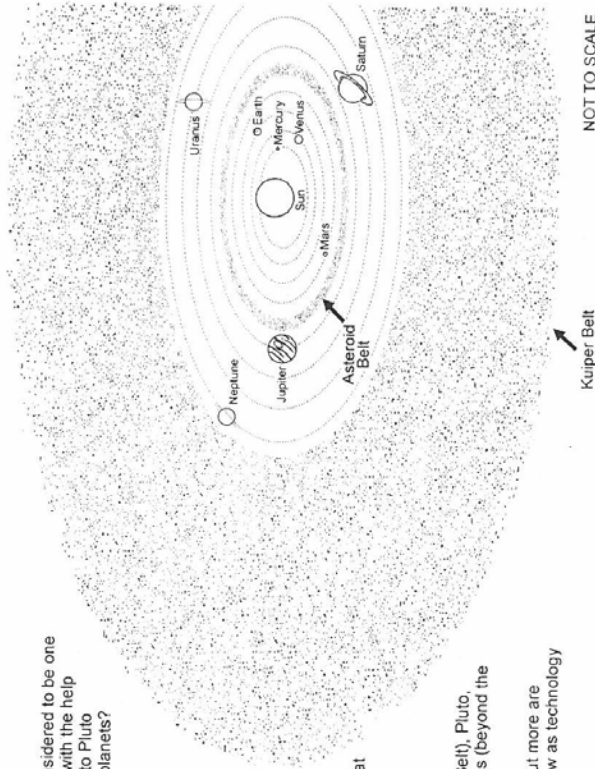
1. must be in orbit around the Sun,
2. must be large enough for its own gravity to squash it into a round ball, and
3. must have cleared the neighbourhood around its orbit of all other objects.

There are many other objects in the neighbourhood of its orbit, so Pluto does not meet the third requirement. On 24 August 2006 the International Astronomical Union decided that it belongs to a new category, the dwarf planets.

The 8 planets are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.

The 5 dwarf planets are Ceres (in the Asteroid Belt), Pluto, Haumea, Makemake (in the Kuiper Belt) and Eris (beyond the Kuiper Belt).

At the moment there are only 5 dwarf planets, but more are waiting to be classified. No doubt the list will grow as technology improves and more are discovered.



Kuiper Belt

NOT TO SCALE



**Iziko PLANETARIUM**

25 Queen Victoria Street, Cape Town. ☎ 021 481-3900

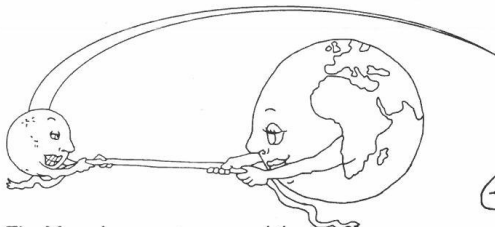


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# Guinea Minnie & the Piece of Sky

Guinea Minnie has forgotten everything her friends told her!  
Can you help her?

What is Guinea Minnie's home planet called? It is the 3rd planet from the Sun.



The Moon keeps going around the Earth because of an invisible force called

g \_ \_ \_ \_ \_



Is there air to breathe and water to drink on planet Mars?

Yes No

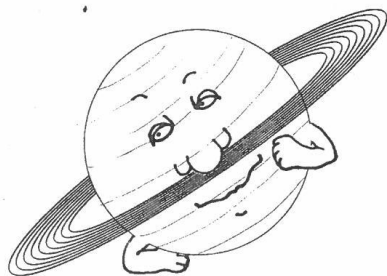


The Sun is our nearest

S \_ \_ \_ \_



What is the name of the planet closest to the Sun? It has many craters and is very hot on one side and very cold on the other.



The Moon and the Planets don't have their own light.

They r \_ \_ \_ \_ \_

the Sun's light down to Earth.



Twinkle, twinkle little star ...  
Do stars really twinkle?

Yes No

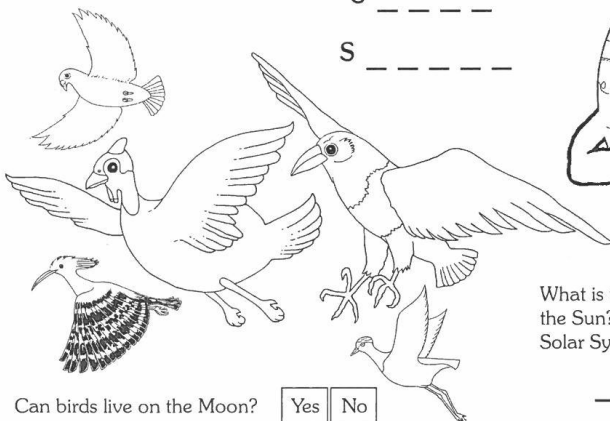


**iziko**  
museums of cape town

The Sun and its planets is called the

S \_ \_ \_ \_ \_

S \_ \_ \_ \_ \_



Can birds live on the Moon?

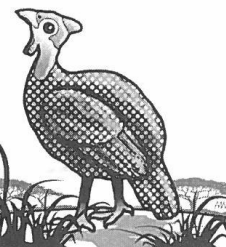
Yes No



Are stars really pointy?

Yes No

What is the name of the 5th planet from the Sun? It is the biggest planet in our Solar System and made of gas and liquid.



## Iziko PLANETARIUM

25 Queen Victoria Street, Cape Town. ☎ 021 481-3900

## **GATE MUSEUM PROGRAMME ASSESSMENT TOOL**

### **Pilot Project**

#### **De-briefing and Final Assessment**

VENUE: Imibala Trust Office

DATE: Thursday 3 April 2014

TIME: 09h00 - 12h30

#### **INSTRUCTIONS:**

All learners must be present for the entire morning.

All learners must participate in all the exercises.

#### **PURPOSE:**

- To de-brief learners and facilitators after completing the final assessment programme.
- To receive feedback from participants through group sessions viewing of the photographic record of the final assessment programme as a group activity (verbal/interactive).
- To receive feedback (individual) from the written responses to a series of structured affective and effective questions and tasks.
- To select the final group of 10 (TEN) learners who will participate in the Imibala GATE Pilot Project.

#### **SESSION 1 (09h30-10h30)**

- Warm-up exercise
- Viewing excursion photographs

- Group discussion

## SESSION 2 (11h00 – 12h00)

- Written assessment to identify final Imibala GATE Pilot Project Participants

On the journeys I made between Somerset West and Cape Town,

- I felt/thought/reacted in the following ways:

NAME:.....

## THE CASTLE OF GOOD HOPE

- I did not enjoy the following things, and will explain why:
- This is what I thought of the instructor who took us round, and why:

## THE SLAVE LODGE

- Write about 3 things that were new to you, and explain how they affected you, in every
- Write about 3 things that were new to you, and explain how they affected you, in every way:
- If you had been the instructor for that visit, how would you have made the session more interesting for the group?

## AT THE BO-KAAP

- What did you learn about the use of the mosque you visited?
- What features stood out for you in the Bo-Kaap and why?
- How did the instructor make the visit interesting for you?

## AT IZIKO MUSEUM

- What THREE interesting facts did you learn about the SAN people?
- What THREE interesting facts did you learn about Rock Art?
- How did the instructor make the visit to the Museum interesting?

## AT THE PLANETARIUM

- If you were given the opportunity to go to the Planetarium again, plan the session.

## CHOOSE ONE OF THE FOLLOWING TOPICS AND WRITE ABOUT IT:

- I AM AN EDUCATOR AT IZIKO.....
- I LIKE LIVING IN THE BO-KAAP BECAUSE .....
- I WOULD LIKE TO LIVE IN CAPE TOWN BECAUSE .....